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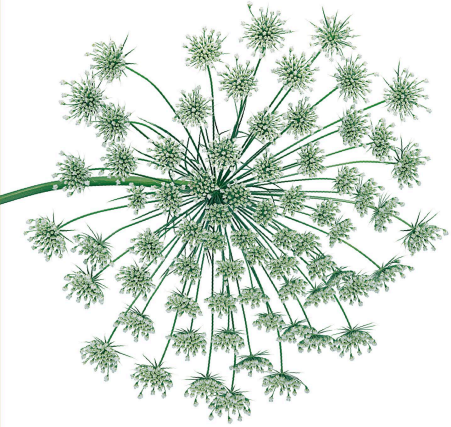

ENCYCLOPEDIA OF PLANTS & FLOWERS

EDITOR-IN-CHIEF

CHRISTOPHER BRICKELL

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PREFACE

This new edition of the *Encyclopedia of Plants and Flowers* is a testament to the continuing value of this reference for gardeners. It is nearly 20 years since the first edition was published, and this special work continues to earn its place on any bookshelf.

We have endeavored to make information available to all on every aspect of horticulture. What makes this encyclopedia so special is the breadth of its appeal to both beginners and experienced gardeners. As a reference work, it covers all of the key areas of how to create a garden and provides detailed plant profiles in its extensive A–Z dictionary. It is the plant catalog, however, that really gives this book its wide reach, removing barriers to accessing information and providing inspiration for all gardeners. Structured according to garden use, plant form, color, and size, this section allows readers to find the plants they need without any prior horticultural knowledge. The detailed descriptions, accurate naming, and cultivation advice is of use to everyone. In all, this is the ideal introduction to garden plants and how to use them.

Garden plants continue to increase in diversity. Expert nurseries breed new forms and gardeners continually experiment with where and how to grow plants. These advances are especially important today, as the increasing impact of climate change presents us with both challenges and opportunities. This new edition is updated with some of these recent introductions, and reflects our most recent knowledge about our changing world.

As Director of Horticulture for the Royal Horticultural Society in the United Kingdom, I am privileged to be involved with all four of our established gardens—RHS Wisley, Rosemoor, Hyde Hall, Harlow Carr, and our developing fifth garden, RHS Bridgewater in Salford. Walking around these gardens with the curators and their teams, discussing new plans and developments, is to enjoy a living reflection of this encyclopedia. Every garden has a well-used copy, constantly referenced by both students and experienced staff to check facts and to catalyze new ideas.

Our thanks and gratitude is due again to the Editor-in-Chief, Chris Brickell. His name is synonymous with many of the books that helped galvanize my early interest in gardening and my subsequent training, so it's an immense pleasure for me to write this preface. I also wish to thank and acknowledge the extensive number of expert contributors for so freely sharing their knowledge. I am delighted to introduce this new edition, which I hope will continue to inspire all to garden.

Dr. Tim Upson
Director of Horticulture, The Royal Horticultural Society, 2019

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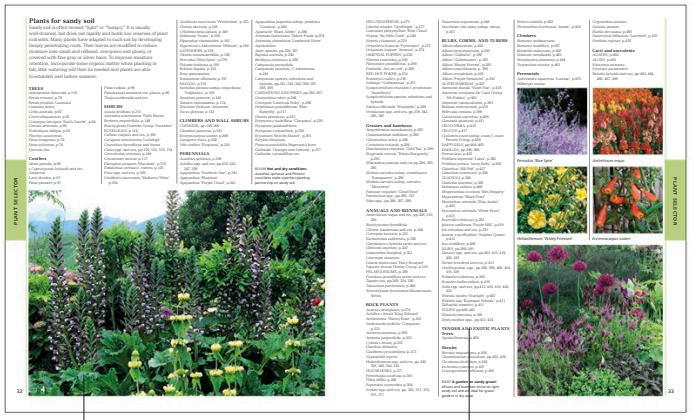
HOW TO USE THIS BOOK

The core of this book is its two main sections—The Plant Catalog and the Plant Dictionary. Here you will find descriptions and cultivation advice for thousands of plants. Plant Names and Origins explains the system for classifying and naming plants, while Creating a Garden offers advice on design, planting, and basic pruning.

The Plant Selector

The Plant Selector recommends plants for a variety of sites, soils, and purposes, making it easy to find one to suit your needs. The list is divided into 23 useful categories, including plants for groundcover in sun or shade, drought-tolerant plants, fragrant plants, and those suitable for hedges and windbreaks. Many are included in the Plant Catalog and are cross-referenced to a picture and full description.

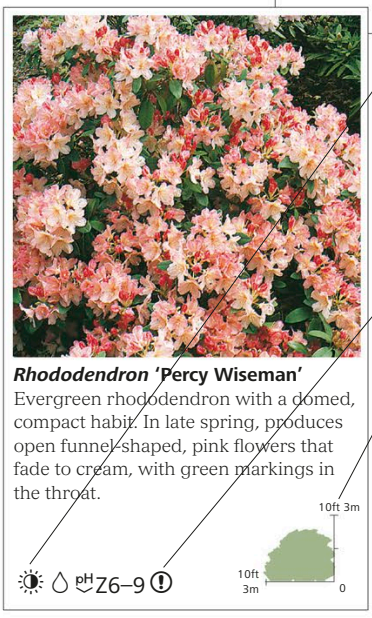


Photographic reference
Garden themes and uses are illustrated, together with photographs of selected plants.

Top choices
Plants are arranged by group, then listed alphabetically.

Catalog page

If you know a plant but cannot remember its name, have a specimen that you want to identify, or simply wish to choose plants for your garden based on their size or coloring, the Plant Catalog is the place to start.



***Rhododendron* 'Percy Wiseman'**
Evergreen rhododendron with a domed, compact habit. In late spring, produces open funnel-shaped, pink flowers that fade to cream, with green markings in the throat.

Cultivation, cold-hardiness, and heat tolerance
Symbols show the plant's preferred growing conditions and tolerance of cold and heat. However, the climatic and soil conditions of your particular site should also be taken into account as they may affect a plant's growth. (See also key, left.)

Toxic plants
This symbol indicates that the plant can be toxic. Details are given in the genus introductions in the Plant Dictionary.

Size and shape
For most plants the approximate height (H) and spread (S) are given at the end of each caption. (The "height" of a trailing plant is the length of its stems, either hanging or spreading.) For Trees, Conifers, and Shrubs a scale drawing shows the size and shape of each plant at maturity.

Size categories

Within most groups in the Plant Catalog, plants are arranged by size (then subsequently by season of interest). Size categories range from large to small, but are defined differently from group to group. Sizes are based on plant heights. The specific height ranges for large, medium, and small can be found in the introductory section for the relevant plant group.

Color order

Within each group, plants are arranged by the color of their main feature. Colors are arranged in the same order: from white through reds, purples, and blues to greens, yellows, and oranges.

Variegated plants are categorized by the color of their foliage variegation (i.e. white or yellow); succulents are arranged by the color of their flowers, if produced.

The symbols

- Prefers sun
- Prefers partial shade
- Tolerates full shade
- Prefers well-drained soil
- Prefers moist soil
- Prefers wet soil
- pH Needs acid soil
- Toxic plant

Abbreviations

cv(s)	cultivar(s)
f.	forma
H	height (or length of trailing stems)
illus.	illustrated
min.	minimum
p(p).	page(s)
pl.	plural
S	spread
subsp	subspecies
subspp	subspecies (pl.)
syn.	synonym(s)
var.	varieties

The Plant Catalog

This section combines plant portraits and descriptions in a colorful catalog of 4,000 plants divided into groups: Trees (including conifers); Shrubs; Roses; Climbers and Wall Shrubs; Perennials (including grasses, bamboos, rushes, sedges, and ferns); Annuals, Biennials, and Bedding Plants; Rock Plants; Bulbs; Water and Bog Plants; and Tender and Exotic Plants. A short introduction to each group is followed by plants arranged by size, season of interest, and color and includes feature panels on plants that have particular appeal.

Feature panels
Plant types or genera of special interest to the gardener are presented in separate feature panels within the appropriate group. Close-up photographs of individual flowers or plants allow quick identification or selection.

Page headings
Headings reflect the way in which each plant group is subdivided—usually by size and main season of interest. (See also Size categories, left.)

Color tabs
These indicate a change of color within the size group for each season.

Plant portraits
Color photographs assist in the identification and selection of plants.

Tabs
Color-coded tabs make it easy to find each plant group.

Plant names
The botanical name is given for each plant, and where appropriate, common names are listed in brackets.

Captions
Captions describe the plants in detail and draw attention to any special uses.

The Plant Dictionary

The Plant Dictionary contains entries for every genus in the Encyclopedia and includes an additional 4,000 recommended plants to those featured in the Plant Catalog. It also functions as an index to the Plant Catalog.

Genus names
The genus name is followed by common names and synonyms, where appropriate, and family names.

Genus entries
A concise introduction covers the distinctive characteristics and hardiness range of plants in the genus, as well as advice on siting, cultivation, propagation, and, if relevant, pruning, pests and diseases, and toxicity.

Plant names
Botanical names, synonyms, and common names are given as appropriate. The genus name is abbreviated; specific epithets (eg. *nobile*) are abbreviated only if previously given in full.

Plant descriptions
Key characteristics of the plant are described. Hardiness and cultivation needs are included only if specific to the plant. Cultivar entries run on from the species entry, with the binomial omitted.

Illustrated plants
Descriptions for illustrated plants appear in the Plant Catalog, unless part of a feature panel (see below left).

Cross-references
Synonym cross-references are listed alphabetically.

RHEUM

Rhubarb

POLYGONACEAE

Genus of rhizomatous, often tough or woody, perennials, grown for their foliage and overall appearance. Includes the edible rhubarb and various ornamental plants. Some species are extremely large and require plenty of space. Fully hardy. Prefers sun or partial shade and deep, rich, well-drained soil. Propagate by division in spring or by seed in fall ① Leaves may cause severe discomfort if ingested.

***R.* 'Ace of Hearts'**, syn. *R.* 'Ace of Spades'. Clump-forming perennial. H to 4ft (1.2m), S 3ft (90cm). Has elongated, heart-shaped, dark green leaves, to 14in (35cm) long, red-veined above, purple-veined beneath. Bears long panicles of numerous, tiny, star-shaped, very pale pink to white flowers in mid- to late summer. Z4–9

***R.* 'Ace of Spades'.** See *R.* 'Ace of Hearts'.

R. palmatum. Clump-forming perennial. H to 8ft (2.5m), S to 6ft (1.8m). Has 2–2½ft (60–75cm) long, rounded, 5-lobed, mid-green leaves. In early summer, bears broad panicles of small, creamy-green to deep red flowers. Z5–9.

'Atrosanguineum' illus. p.439.

Rhipsalidopsis gaertneri. See *Hatiora gaertneri*.

Rhipsalidopsis rosea. See *Hatiora rosea*.

Plant Hardiness Zones

A plant's ability to withstand relative low and high temperatures is referred to as cold-hardiness and heat tolerance, respectively. To help gardeners select plants based on these factors, the US Department of Agriculture has divided the United States into hardiness zones. Although these zones serve as a reliable guide, they are not the only indicator of the possible success of a plant. Other factors, such as soil type, fertiliy, and sun exposure, can affect it. All plants in this encyclopedia have been assigned zone ratings determined by the lowest temperature the plant is likely to withstand.

ZONE	TEMPERATURE RANGE	CATEGORY	DEFINITION
1	below –50°F (–46°C)	Severest winter	Only the hardiest plants are able to withstand winter in this zone. Others will require protection from cold temperatures.
2	–50° to –40°F (–46° to –40°C)	Severe winter	Only very hardy plants will survive winter in this zone. Most plants will require protection from cold temperatures.
3	–40° to –30°F (–40° to –34°C)	Severe winter	Evergreens, grasses, and hardy perennial plants that can tolerate cold winters will grow in this zone.
4	–30° to –20°F (–34° to –29°C)	Severe winter	Perennials in this zone, along with numerous evergreens and grasses, tolerate the very cold winters in this zone.
5	–20° to –10°F (–29° to –23°C)	Cold winter	A great variety of perennials, deciduous trees, evergreens, grasses, and annuals can tolerate the cold winters in this zone.
6	–10° to 0°F (–23° to –18°C)	Cold winter	Cold winters of relatively short duration in this zone means a wide variety of nontropical plants will survive here.
7	0° to 10°F (–18° to –12°C)	Average winter	Where rainfall is sufficient, the relatively mild winters and long summers here support a wide variety of garden plants and trees.
8	10° to 20°F (–12° to –7°C)	Mild winter	Mild winters and long, hot summers support a wide variety of plants here, but high humidity may be a problem for some species.
9	20° to 30°F (–7° to –1°C)	Mild winter	Mild, subtropical conditions allow plants from all categories to grow here, unless the plant needs a cold period to thrive.
10	30° to 40°F (–1° to 4°C)	Subtropical	Tropical plants grow well here. Some popular species from temperate regions may find it too warm.
11-15	Above 40°F (Above 4°C)	Tropical	Tropical and subtropical plants dominate gardens in this zone. Temperate species may adapt with special care.

ZONE NOTE

The zones presented in this book are offered as approximate guides and should not be considered as absolute. Practicing horitcultural techniques such as mulching and winter protection will alter a plant's interaction with its environment and may enable it to surive beyond the zones given in this or other publications.

PLANT NAMES AND ORIGINS

Plants have always been given local names, with the result that many of them were called by a different name in different regions and countries. To overcome this problem, a common naming system was devised and developed into the plant naming system that is now used worldwide.

The binomial system

Greek and Roman scholars laid the foundations of our method of naming plants, but the binomial system used today was largely established in the 18th century by Swedish botanist Carl Linnaeus (1707–1778). Linnaeus classified each plant with two Latin words, rather than the descriptive phrases used previously. The first word describes the genus (eg. *Ilex*) and the second the epithet (eg. *aquifolium*). Together they provided a name for a particular plant species such as *Ilex aquifolium* (English holly). Other species in the same genus were given different epithets such as *Ilex crenata* and *Ilex serrata*. The system has been developed by scientists so that the entire plant kingdom is divided into a universally recognized "family tree" (see opposite).

The meaning of plant names

Plant names are derived from various sources. Some are commemorative—the *Fuchsia* is a tribute to German physician Leonhart Fuchs—while others indicate a plant's geographic origins, as with *Parrotia persica* (of Persia). A plant may be named after the collector who introduced it, such as *Primula forrestii*, cultivated by George Forrest. Alternatively, the name may describe the plant's characteristics, for example, *quinquefolia* in *Parthenocissus quinquefolia*, which means with foliage made up of five leaflets; it comes from the Latin *quinque* (five) and *folium* (leaf).

A plant name may change either because the plant has been incorrectly identified; or because it has been given an earlier name; or because the name has been found to apply to two different plants; or because new knowledge changes the plant's classification. In this book, synonyms are included so renamed plants can be easily recognized.

Common names

Although many plants have familiar common names, botanical names are used because not all plants possess a common name, or they may share a name with other plants. In addition, a common name may be used in different regions to describe different plants. For example, in Scotland "plane" refers to *Acer pseudoplatanus* (sycamore); in England it refers to the London plane (*Platanus* x *hispanica*), and in America both "plane" and "sycamore" are used for (*Platanus occidentalis*). Common names may also refer to unrelated plants as is the case with sea holly (*Eryngium*), hollyhock (*Alcea*), and summer holly (*Arctostaphylos diversifolia*), none of which is a true holly (*Ilex*). Another problem is that one plant may have several common names: heartsease, love-in-idleness, and Johnny-jump-up all refer to *Viola tricolor*.

WHAT IS "OF GARDENS"?

The epithet "of gardens" is added to names that have been wrongly applied to plants in cultivation—that is, the plant has been misidentified because of its similarity to another plant. It can also be used for plants that have not yet been formally named, such as a hybrid that has arisen in cultivation.

Botanical divisions

Divided into a hierachy, plants are classified according to the following groups, which help to identify them:

The family

Plants are grouped in families according to the structure of their flowers, fruits, and other organs. Families may consist of clearly related plants, such as orchids (family Orchidaceae), or embrace diverse plants as in the family Rosaceae: *Alchemilla, Cotoneaster, Crataegus, Malus, Geum, Prunus, Pyracantha, Sorbus,* and *Spiraea*.

The genus and its species

A family may contain one genus (for example, *Eucryphia* is the only genus in the family Eucryphiaceae) or many—the daisy family Compositae has more than 1,000 genera.

Each genus comprises related plants, such as oaks (genus *Quercus*) or lilies (genus *Lilium*), that have several features in common, and a genus may contain one or a large number species. For example, a member of the genus *Lilium* could be any lily, but *Lilium candidum* denotes just one type.

A species is a group of plants that consistently and naturally reproduce themselves, often by seed or vegetatively, generating plant populations that share similar characteristics.

ABOVE **Wild origins**
Many plant species that subsequently become garden plants are initially found in the wild. The North Cape Province of South Africa is home to many annuals and succulents, from which breeders have produced new cultivars and hybrids.

Subspecies, varieties, and forms

In the wild, even plants of the same species can exhibit slight differences, and these are split into three subdivisions:
—The subspecies (subsp.) is a distinct variant of the species.
—The variety (var.) differs slightly in its botanical structure.
—The form (f.) has only minor variations, such as the habit or color of leaf, flower, or fruit.

Cultivars

Plant breeders are constantly trying to improve a plant's performance, and produce new "cultivars" (a contraction of **culti**vated **var**ieties) that are more vigorous, produce more flowers, or have other favorable characteristics that differentiate them from the wild form of the species.

Although many cultivars are bred by specialists, others are found in the wild or occur as mutations and are then introduced to cultivation. To reproduce cultivars that exhibit a consistent set of characteristics, many must be propagated vegetatively (cuttings, grafting, or division) or grown annually from specially selected seed. Cultivars have vernacular names, which are printed in Roman type within quotes (eg. *Phygelius aequalis* 'Yellow Trumpet').

When plant breeders raise a new cultivar, it is given a code name that may be different from the name under which the plant is sold. For example, the rose Casino also has the code name 'Macca'; in this book, both names are cited, and styled: *Rosa* CASINO ('Macca').

Hybrids

Sexual crosses between botanically distinct species or genera are known as hybrids and are indicated by a multiplication sign. If the cross is between species in different genera, the result is called an "intergeneric hybrid" and, when two or more genera are crossed, the name given is a condensed form of the the relevant genera; x *Cuprocyparis,* for example, covers hybrids between species of *Chamaecyparis* and *Cupressus*.

If more than three genera are involved, then the hybrids are named after a person and given the ending "-ara". Thus x *Potinara,* a hybrid of *Brassavola, Cattleya, Laelia,* and *Sophronitis,* commemorates M. Potin of the French orchid society. More common are "interspecific hybrids," which are crosses between species in the same genus. These have a collective name preceded by a multiplication sign: *Epimedium* x *rubrum* covers hybrids between *E. alpinum* and *E. grandiflorum*.

When a plant is grafted onto another, a new plant occasionally arises that contains tissues of both parents. These are named in the same way as sexual hybrids, but are denoted by a plus sign: + *Laburnocytisus* 'Adamii', for example, is a graft hybrid between *Laburnum* and *Chamaecytisus*.

Cultivars of hybrids are listed under a botanical name, or if the parentage is complex, by giving the generic name followed solely by the cultivar name (eg. *Rosa* 'Buff Beauty').

Visual Key to Plant Classification

In horticulture, plants are classified according to a hierarchical system and named primarily on the basis of Linnaeus's binomial approach (genus followed by species epithet). As an example, part of the Rosaceae family is set out below, showing all levels of this system.

FAMILY
A group of several genera that share a set of underlying natural characteristics. Family names usually end in *-aceae*. Family limits are often controversial.

Rosaceae

GENUS (PL. GENERA)
A group of one or more plants that share a range of distinctive characteristics. Several (rarely one) genera are classified into one family. Each genus contains one or more species and its name is printed in italic type with an initial capital letter.

Rosa

Prunus

SPECIES
A group of plants that breeds naturally to produce offspring with similar characteristics; these keep it distinct from other populations in nature. Each species has a two-part name printed in italic type.

Rosa rugosa

Prunus lusitanica

SUBSPECIES
A naturally occurring, distinct variant of a species, differing in one or more characteristic. Indicated by "subsp." in Roman type and an epithet in italic type.

Prunus lusitanica subsp. *azorica*

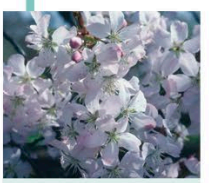
VARIETAS* AND *FORMA
A *varietas* (var.) is a minor species subdivision, differing slightly in botanical structure. A *forma* (f.) is a minor variant of a species, often differing in flower color or habit from others in the species.

Rosa gallica var. *officinalis*

Prunus incisa f. *yamadei*

CULTIVAR
Selected or artificially raised, distinct variant of a species, subspecies, *varietas*, *forma*, or hybrid. Indicated by a vernacular name printed in Roman type within single quotation marks.

Rosa gallica var. *officinalis* 'Versicolor'



Prunus 'Pandora'

CREATING A GARDEN

A beautiful garden is everyone's dream, and this chapter provides all the information you need to create stunning beds and borders. There is helpful advice on producing color schemes, including dazzling hot beds, relaxing pastel designs, and elegant white displays, as well as ideas for using plant forms and textures to create arresting images throughout the year. There are also tips to help you select a garden style, whether you prefer the informality of a cottage garden or the ordered symmetry of a formal design. Practical advice on a range of gardening techniques, including preparing the soil, planting methods, and pruning basics, completes the picture.

INSPIRATIONAL STYLES

There are many different garden styles, and whether you yearn for neat, symmetrical formality, informal cottage-garden abundance, Japanese minimalism, or contemporary urban chic, it is important to select a look that suits both your home and lifestyle if you are to get the best from your outdoor space. Also think about how much time you have to maintain your design, as this will affect your range of choices.

ABOVE **Formal by design**
The use of symmetry, clear simple geometric shapes, and dwarf box edging for the borders are typical of the formal style. The central sculpture creates a focal point in the structured planting scheme.

Formal gardens

A successful formal garden has a balanced design, achieved through symmetry and a clear ground plan. Essential characteristics are straight lines; order and geometry; and clearly delineated garden areas. Organized around a central axis or pathway, formal gardens often focus on a key view through the garden from the house. The geometry is clear, but generous scale and balanced proportions are key considerations.

Geometric shapes feature strongly, but any regular symmetrical shape can be used as long as it sits on at least one axis. Lawns and clipped hedges are important features, the latter defining spaces or views, while dwarf box hedging can be used to edge borders, create decorative parterres, or form knot gardens. If space allows, avenues of trees may line paths to accentuate vistas and draw the eye to a distant focal point.

Balustrades, steps, terraces, and wide gravel pathways are all key features, with the range of hard-landscaping materials, such as gravel and regular paving stones, kept to a minimum. Decorative elements, such as cobble mosaics or brick designs, are also popular in formal gardens. Other features include classical ornaments, such as Versailles cases, urns and statuary, and topiary, which is often used as a focal point. Water is an important element, and pools with reflective surfaces or jets and fountains appear in many formal designs.

Although the rules of formality are simple and clear, it is still a remarkably flexible style. The overall layout can be completely symmetrical, or you can choose to adopt just a few formal elements in a more contemporary design. For example, one axis can be more dominant than another, or a series of balanced, rectangular beds can be veiled with soft, romantic planting. Another modern interpretation of the formal style is a paved courtyard garden with architectural planting, large-scale containers and a small water feature.

Many formal designs also require very little maintenance, apart from annual hedge clipping and shrub pruning.

Informal gardens

Country gardens, cottage gardens, wildlife plots, and prairie-style plantings are all informal designs. Unlike formal schemes, they allow a greater degree of flexibility in the design and planting plans.

Cottage gardens

Cottage gardens are traditionally simple in layout, often with a central path leading to the main door and planting beds filled with flowers, herbs, and vegetables on either side. If the garden is large enough, it may also include more naturalistic areas, such as orchards, meadows, and informal wildlife ponds.

The edges of flower beds are softened by a rich profusion of planting, with the flowers encouraged to fall over the path and self-seed at random. Typical cottage garden plants include hellebores, lungworts (*Pulmonaria*), grape hyacinths (*Muscari*), aquilegias, and species daffodils and tulips in spring, with hardy geraniums, lilies, lupins, poppies, campanulas, delphiniums, hollyhocks (*Alcea rosea*) and peonies in summer. Plants are often chosen for their range of flower forms, textures, and colors. Edible crops, such as herbs, vegetables, and fruit trees and bushes, are mixed with the ornamental plants, adding to the atmosphere of abundance and informality.

Natural stone, brick, cobbles, and slate are the best materials for hard landscaping, while simple post-and-rail or picket fences are ideal for boundaries and divisions.

Country gardens

Country gardens also have a relaxed style, with sweeping expanses of lawn and curved, flower-filled mixed beds and borders. Hedges are often used to divide the garden into a series of enclosed spaces with different planting designs and atmospheres in each.

Prairie and wildlife gardens

Prairie planting, championed by many contemporary designers, echoes the tightly woven density of cottage-garden planting by combining broad sweeps of ornamental grasses and sturdy perennials. Grasses such as stipas and calamagrostis are threaded through perennials, such as rudbeckias, echinaceas, symphyotrichums, and heleniums. Prairie schemes suit large, open sites in full sun, where the bold swaths of planting produce the best effects.

Wildlife gardens are designed to provide habitats for birds, insects, and mammals. Domestic gardens can also be wildlife gardens, with naturalistic planting schemes comprising of nectar-rich flowers, and trees for nesting and shelter. An informal pond is usually a feature, to provide homes for amphibians, reptiles, and insects.

Gardeners with more space may opt for a wildflower meadow. These require a sunny site and infertile soil for the rich profusion of native wildflowers and grasses to thrive.

RIGHT Prairie-style plantings
Prairie-style gardens combine the soft, feathery effects of grasses with the muted hues of perennials. Planted in informal drifts, this late summer scheme includes eupatorium, echinacea, and sedum.

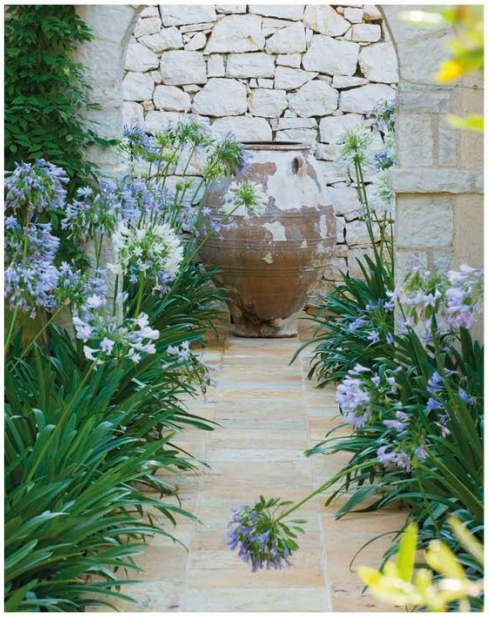
BELOW Cottage-garden informality and abundance
The profuse pink flowers of a climbing rose clambering over an arbor echo the equally abundant planting of cottage-garden perennials in the beds below.

Mediterranean gardens

There are two types of gardens associated with the Mediterranean region: formal and informal. The formal gardens feature water and stone, as well as clipped hedges and specimen trees such as pencil cypresses. Decorative parterres are also common, with the plants selected for foliage rather than flower color. In some gardens in Spain, such as the El Alhambra in Granada, there is a strong Moorish influence, with formal courtyards and water features.

However, the most attainable garden style has an informal structure and relaxed, Mediterranean atmosphere. Gravel is the main hard landscaping material, and is used between areas of planting and to create pathways. Plants native to this region of Europe often have silvery, sage gray-green or blue-tinted foliage, which reflects the strong summer sun. Olive trees, citrus fruits, figs, vines, santolinas, and artemisias, as well as herbs like thyme, sage, lavender, and rosemary, are popular planting choices.

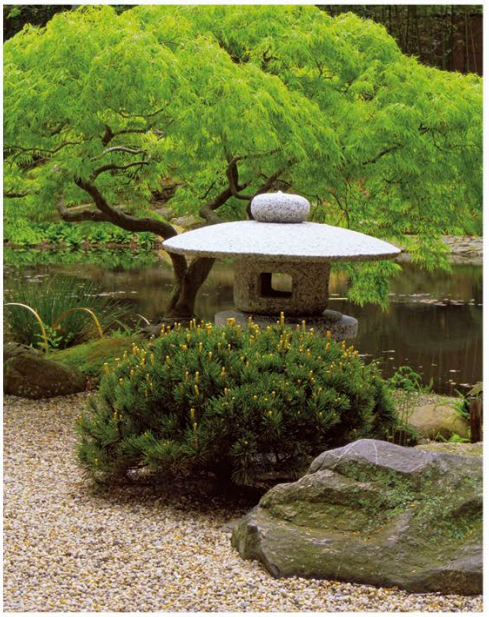
Another informal approach, often seen in urban areas, is to create a courtyard with walls that have been painted white, warm terracotta, or bold blues or pinks. Mosaic-tiled walls, cobbled floors and terra-cotta pots planted with bright pelargoniums or white *Convolvulus cneorum* complete the Mediterranean theme. If you live in a cooler climate, a sun-drenched courtyard will also provide some shelter for tender plants. Hot, south-facing gardens call for a shady arbor or pergola festooned with flowering climbers, such as bougainvilleas or jasmine, to create a comfortable area for alfresco dining or relaxation.



ABOVE **Cool Mediterranean courtyard**
A Mediterranean courtyard, with gleaming white walls and floor that help reflect the heat of the sun, is perfect for growing sun-loving agapanthus.

Desert gardens

Dramatic, chic, and starkly beautiful, desert gardens have become very fashionable in hot, frost-free locations with low rainfall. Pale-colored walls, gravel, rocks, boulders, and driftwood are features, together with tough, drought-tolerant plants like cacti and succulents, such as agaves, aloes, and yuccas, which do not need extra irrigation in these hostile environments. In the right place, a desert garden is very eco-friendly, as it focuses on native plants that thrive with little water.



ABOVE **Japanese contemplative space**
Natural materials, such as carefully positioned rocks and gravel, plants like acers and pines, and ornamental lanterns are typical features of a Japanese garden.

ABOVE **Mediterranean planting**
Drought-tolerant plants, including spiky phormiums, rock roses, and artemisias, thrive in the gravel of a Mediterranean-style garden on a hot, sunny hillside.

Japanese gardens

The Japanese garden style is designed to reflect the natural landscape using a limited planting palette to produce quiet, contemplative spaces. The key to creating a successful Japanese garden is to consider how the main elements, such as boulders, gravel, and plants, relate to one another, and how they are connected both symbolically and spiritually to the natural world.

In many instances, traditional Japanese spiritual beliefs are fundamental to the designs. Both the ancient religion of Shinto, and the Buddhist teachings that were introduced later, celebrate nature, and all natural elements are regarded as sacred and worthy of respect. In Zen gardens, key elements are used to create representations of natural landscapes. For example, raked gravel is used to echo flowing water, with stones symbolizing islands, boats, or animals. The gravel is raked daily, a ritual viewed by Buddhists as an important aid to contemplation, and the gardens often include little or no planting, relying on moss and lichens rather than on large, dramatic plants.

The cultivation of beauty as a spiritual activity is also reflected in Japanese tea gardens in which a *roji* (dewy path) is lit by stone lanterns and leads the visitor on a journey past water basins, stone buddhas,

and other spiritual symbols to the ceremonial tea house. These gardens are more heavily planted, and include maples (*Acer*), pines, azaleas, and camellias, which are subjected to a tight pruning regime to restrict their size and create miniature forms of larger trees or shrubs. The planting does not focus solely on evergreens and there are splashes of color in the form of cherry blossom and camellias in the spring, elegant summer irises, and the fiery fall foliage of the maples contributing to the seasonal display.

Contemporary gardens

With many of us living increasingly urban lives, contemporary gardens have had to fulfil a number of different functions, providing a space for planting, relaxation, play, and entertaining. Modern urban gardens can differ in emphasis, and be treated either as purely functional spaces in which hard surfaces prevail along with furniture, lighting effects, and water features to create the ultimate outdoor room, or as green oases in which the planting dominates.

The layout of an urban garden is generally based on simple lines, often with an asymmetrical floor plan, and uses a combination of natural and man-made materials, such as concrete, glass, plastic, acrylic, and steel, to provide textural interest. Furniture often takes the form of integral benches, stylishly coordinated tables and chairs, and recliners, while sculpture provides a focal point, and can be combined with water. Jets or cascades are popular, but tanks of reflective water are becoming increasingly popular.

Contemporary planting designs

As space can be limited in today's urban gardens, the planting often focuses on a more limited choice of species, and those that provide architectural interest. Grasses, bamboos, and large-leaved foliage plants, such as the hardy banana (*Musa basjoo*), phormiums, and cordylines are popular in contemporary schemes.

Modernist designs often employ block plantings of plants such as small festucas and ophiopogons. These may be used in conjunction with pleached trees planted along the boundaries to provide privacy in overlooked gardens. Dramatic containers made from clay, stone, or steel can be used as focal points or lined up in a row to add drama and rhythm to the design. Popular plants for containers include clipped topiary box, bay or Japanese holly (*Ilex crenata*), bamboo, succulents like agaves, or bold grasses.

ABOVE Contemporary urban style
This urban, split-level garden, with its smart, outdoor seating, shows how contemporary outdoor areas can function in multiple ways—both as outdoor rooms and areas for lawns and beautiful plants.

Tropical gardens

This style of garden is most suitable for tropical and warm-termperate regions, where the native plants are naturally lush, but a similar effect can be created in cooler climates with the careful selection of plants.

The design is informal, with man-made structures made from rough-hewn timber and unworked stone, reflecting the traditional crafts of people living in tropical environments. Water plays a large part in designs, mimicking the landscapes that inspired the style, with waterfalls, streams, and, occasionally, swimming pools adding to the lush picture.

A tropical garden is a celebration of foliage shapes, textures, and colors. Taller species such as eucalyptus, palms, bamboos, and cordylines provide height, with the space below filled with lower-growing shrubs, grasses, and flowering perennials, such as birds-of-paradise (*Strelitzia*) and streptocarpus.

This exciting look can be created in temperate areas with exotic architectural plants including tree ferns, bamboos, fatsias, ferns, phormiums, and hardy bananas (*Musa basjoo*). For shots of bright detail, use vibrant canna lilies, white arum lilies (*Zantedeschia*), dahlias, crocosmias, agapanthus, and lobelias.

BELOW Tropical abundance
The striking leaves of elephant ears (*Alocasia*) provide a dramatic focal point in an exotic, junglelike garden. Bright sparks of color are provided by the vibrant red cannas which stand out amidst the lush green foliage.

ASSESSING YOUR SITE AND SOIL

It is important to discover as much as possible about the conditions that prevail in your garden before you start planning and planting. Take note of the local environment and climate, as well as the topography and soil conditions, as your plant choices will be determined by these factors. Check the aspect, which influences the sun and shade in a garden, and the soil type, to discover its moisture and nutrient content.

Understanding aspect

Determining how much sun and shade your garden receives is of paramount importance when making plant selections. Some plants prefer full sun, for example, while others need partial or full shade to thrive. You can use a compass to figure out which way areas or borders face. Those facing south will be in sun for most of the day, while those that face north will be shady. East-facing areas have morning sun and evening shade, while the opposite applies to those facing west.

Patterns of sun and shade also change throughout the day, and a garden that is in full sun at midday may have areas of shade in the morning and late afternoon. For this reason, it is wise to study your garden on a sunny day and make a note of the way shadows move around the plot. Remember, too, that the seasons can affect the level of sunlight in a garden; for example, an area that is in sun in the summer could be in constant shade during the winter, which may have an effect on evergreens that need a sunny site to thrive.

However much sun your garden receives, there are plenty of plants to choose from that will thrive in those conditions. As well as plants for sun or shade, there are many that are happy with a little of both.

ABOVE **Plants that thrive in sun**
Alliums, with their dramatic globes of rich pinkish-purple flowers, thrive in open, sunny sites, and make great partners for other sun-lovers, like catmints and salvias.

Assessing microclimates

Variations in the conditions in different parts of a garden are described as "microclimates," and may include frost pockets at the bottom of a slope, sheltered hot spots by a warm wall, pockets of wind turbulence, and exposed sites. Rather than limit your plant choice, microclimates actually allow you to grow a wider range of plants, so note the temperature, water levels, and air and wind circulation around your garden.

Types of soil

Knowing your soil type is key to growing healthy plants. It is always preferable to select those that thrive in the soil you have, rather than fighting it by trying to grow plants that are not adapted to your conditions, as they will inevitably suffer.

There are three main types of soil: sand, clay, and silt. They are categorized according to the size of the soil particles, which determines the level of water and plant food they can hold. Most garden soils are a combination of sand and clay, with one type dominating the mix; the ideal soil is "loam," which contains almost equal measures of sand and clay.

Sandy soils Sandy soil particles are relatively large and water drains freely through the spaces between them. As a result, these soils are free-draining, but because plant nutrients are dissolved in water, they are also quite infertile. Sandy soil is ideal for Mediterranean plants.

Clay soils Clay particles are minute, and trap moisture in the gaps between them.

LEFT **Growing shade-lovers**
Shade-loving plants, such as the hart's tongue fern (*Asplenium scolopendrium*), flourish under the light shade provided by silver birch trees (*Betula pendula*).

ABOVE **Plants that thrive in dry, sandy soil**
Dry, sandy soils and a sunny site provide the perfect conditions for many euphorbias, Californian poppies, eremurus, and succulents, such as agaves.

The particles are also porous, so these soils are very moisture-retentive and rich in nutrients. However, clay soils can become waterlogged in wet conditions and form impenetrable crusts when dry. They are ideal for "hungry" plants like fruit trees.

Silt soils Pure silt soils are rare, usually occurring on river plains. They have a high nutrient content, but can become compacted and waterlogged like clay.

Loam With almost equal proportions of sand and clay, loam offers the best of all worlds, retaining enough water for plant roots to absorb, but allowing excess moisture to drain away and preventing waterlogging. It also holds on to nutrients well, making it the perfect garden soil for most plants.

Improving your soil

Whether you have a dry, sandy soil or a sticky clay one, your plants will grow better if you improve its quality by applying plenty of organic matter, such as well-rotted farmyard manure, garden compost, or spent mushroom compost. Organic matter coats sandy soil particles, helping them to retain more water, while it also opens up the structure of clay soils, allowing water to drain more easily.

Either dig it into the soil when preparing for planting or lay a thick layer as a mulch. Worms and microorganisms will then work it into the soil.

The structure and drainage of heavy clay soils can also be improved by the addition of horticultural grit. Simply dig the grit into the soil over a large area. In extreme circumstances, very heavy, waterlogged soils may require drains.

Understanding pH

The pH of a soil is a measure of its acidity or alkalinity, which also influences the types of plants you can grow successfully. It is measured on a scale from 1 to 14; neutral soil has a pH of 7, a number below this indicates an acid soil, while alkaline soils have a pH above 7. A precise measurement can be obtained by performing a simple soil test (*see right*). Although many plants are tolerant of a wide pH range, there are some that are adapted to a particular soil type. Rhododendrons, azaleas, and heathers (*Erica*), for example, require an acidic soil, while lilacs (*Syringa vulgaris*) and the pineapple broom (*Cytisus battandieri*) grow best in alkaline soil.

TESTING YOUR SOIL

An easy way to find out what type of soil you have is to dig up a small sample and roll it between your fingers to feel the texture. Soils with a high water content can be rolled into a ball. You can also use a simple kit to test the pH.

Sandy and silty soil

Soils rich in sand feel gritty between your fingers; silty soils feel silky. Both fall apart when rolled into a ball. Sandy soils are easy to dig, and warm up quickly in spring. You may also find that borderline hardy plants survive winters better in these dry soils.

Clay soil

Smooth, sticky and dense, clay soils retain their shape when rolled into a ball, and those with a very high clay content remain intact even when formed into a horseshoe. They are often described as "heavy" soils because they are difficult to dig.

Using a pH testing kit

You can buy pH testing kits online and from garden centers. Place a small soil sample in the tube and add the solution provided with the kit. Wait until the solution changes color, and then match it to the chart. Take a few readings from different areas of the garden, as they may have different pH values.

DESIGNING WITH PLANTS

There is a plant for every situation, be it a tree, shrub, perennial, annual, or bulb. When designing with plants, you can include examples from all the plant groups to ensure year-round interest, or focus on just one or two groups for a contemporary look. The key to success is to vary shapes, textures, and colors, and consider how each plant will work with others in your border and in the garden as a whole.

Defining plant groups

Different plant groups fulfill different functions in a design, and understanding how each can be used to the best effect will help you to create a balanced, coordinated display. Trees, large shrubs, and some climbers provide the framework for a planting scheme, offering permanent structure, height, and depth, as well as color and texture. Midrange plants include smaller shrubs, herbaceous perennials, some bulbs, and grasses. They help to define the style of your garden, and provide seasonal interest with their flowers and foliage. Focal plants offer eye-catching accents, drawing the eye to a border or vista, while groundcover plants create a low mat of leaves and blooms at a lower level. Annuals and biennials will put on a show from spring to early fall in containers, and fill the gaps between more permanent planting groups in borders.

ABOVE Creating structural features with plants
The combination of box hedges and conical yew topiary creates a dramatic structural and textural contrast to the less formal perennial flower borders.

Structural plants

Permanent structural plants, such as trees, shrubs, and hedges, make a vital contribution to the shape and form of the garden, and identifying these key plants, and deciding where to position them, is the first step in producing a coherent design.

Evergreens provide year-round interest, while deciduous trees and shrubs inject dramatic displays of flowers in spring and colorful foliage in fall. Hedges not only define boundaries, they also offer shelter and create privacy. Evergreen hedges provide colorful year-round screens and backdrops for other planting groups, while deciduous hedges allow in more light and offer seasonal color. Either type can be formal or informal in style, with leaf size, color, and flowers to consider. Leafy shrubs work in a similar way to hedges, providing a green foliage backdrop to smaller midrange plants and groundcover.

You can also use structural plants to frame or block out views, and to lead the eye around the garden. In addition, trees and shrubs can help to create a visual link between the garden and the landscape beyond, extending the display. Repeated plants will also help to make connections between different areas of the garden and different planting areas.

Structural plants come in many different forms and shapes; for example, they may be rounded and neat, such as choisyas and photinias; spiky and textural, like mahonias, hollies, and yuccas; or looser in form, such as laburnums, weeping pears, or garryas. Many plants can be manipulated to create artificial structural effects, such as climbers clambering over arches, arbors, and pergolas, or along walls. Others can be clipped into topiary shapes; boxwood, yew, and holly are all good candidates for topiary balls, pyramids, and spirals.

LEFT **Using focal plants**
In this beautiful country garden, naturalized tulips in vibrant shades create a carpet of spring color. The focal plant in this design is *Malus floribunda*, with its light-reflecting white blossom and architectural shape.

Focal plants

These are key specimen plants that can be used to catch the eye in a bed or border, in the center of a lawn, or at the end of a pathway. Most focal plants are evergreen or have a distinctive shape or foliage form, but they can also include seasonal plants that perform for short times of the year, providing an accent when it is needed most.

Use focal plants to direct the eye to key areas of interest, or as signposts to guide the visitor around the garden. Phormiums, acers, yuccas, cardoons, and white-stemmed birches will lead the eye to a particular area or distract attention away from unsightly features, like garbage cans.

Midrange plants

This group of plants are of medium height, and include the vast array of herbaceous perennials, bulbs like tulips, daffodils, and alliums, deciduous grasses, and, to a lesser extent, small shrubs, including compact hebes and shrubby potentillas.

Some of the most effective midrange plants rely on their leaf shape and texture for interest more than their blooms, although seasonal flower color is an important feature of many and makes an exciting statement when plants are used *en masse* in a border. When grouped together, those with strong foliage forms, such as acanthus, hostas, ligularias, and rodgersias, also create bold plantings, or they can be used to separate plants with looser flowers or foliage forms.

Midrange plants contribute to the structure of the garden, but because many are perennial, dying down in late fall and appearing again in spring, they are not able to perform the same role as the more permanent woody plants.

Groundcover plants

Not only are groundcover plants highly ornamental, providing a tapestry of color, texture, and form, they also create a blanket over the soil, helping to suppress weeds. Groundcover plants are not restricted to low-growing types, however, and include a range shapes and sizes, the only proviso being that they form a dense canopy.

A dry, sunny site makes an ideal home for drought-tolerant flowering plants, such as dwarf genistas, helianthemums, and hylotelephiums. Leafy groundcover plants include thyme and other mat-forming herbs, *Hebe pinguifolia*, *Santolina chamaecyparissus,* and catmint (*Nepeta*). A cool, shady site is perfect for groundcover plants such as *Cornus canadensis, Geranium macrorrhizum,* and epimediums under trees, and bergenias, hellebores, and ferns by a wall where the soil is reasonably moist.

Seasonal interest

By combining different plant groups and selecting those with a succession of seasonal highlights, you can easily create a garden with year-round appeal.

In spring, focus on flowering trees, such as cherries, crab apples, magnolias, and plums, as well as bulbs like hyacinths, muscari, crocus, daffodils, and tulips that provide color. Summer brings an explosion of flowering perennials, annuals, and bulbs, offering a range of colors, heights, and flower shapes. The fall stars are the trees and shrubs, with acers, cotoneasters and cotinus all injecting foliage color. Team them with late-flowering perennials such as asters. The winter garden also provides seasonal interest, with witch hazels (*Hamamelis*), sarcococcas offering fragrant flowers, color provided by the stems of dogwoods (*Cornus*) and willow (*Salix*), and berries of hawthorns, hollies, and viburnums.

ABOVE Using midrange plants
Midrange plants like hostas are ideal feature plants for a mixed shady border. Repeating plants down the length of the border brings cohesion to the design.

BELOW Creating winter interest
The golden yellow flowers of *Mahonia* x *media* 'Lionel Fortescue' make a striking contrast with the flame-red stems of *Cornus alba* 'Sibirica' in a winter border.

ABOVE Blanketing the ground with plants
Santolinas, with their buttonlike, yellow flowers, make excellent groundcover plants in a gravel planting in full sun, and associate beautifully with spiky eryngiums.

USING COLOR

Color choice is largely about personal preferences, but there are some useful theories on how to match and blend colors that will help you to create pleasing combinations. Remember, too, that light and shade affect colors and that some visually leap forward, stealing the limelight, while others are more recessive. Color can also affect mood and tone, so choose carefully to create the desired atmosphere.

Combining colors

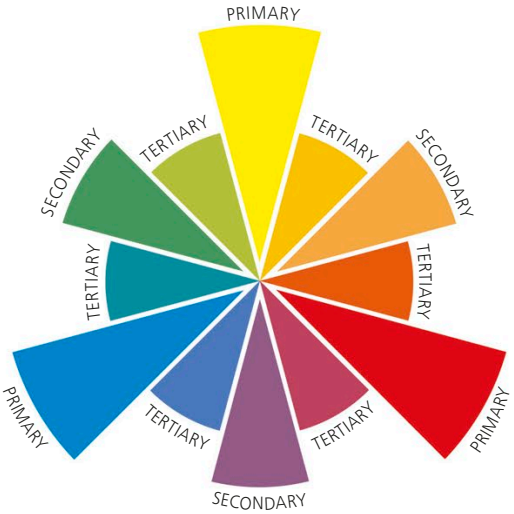
Before selecting colors for your beds and borders, it is a good idea to familiarize yourself with some of the principles of color theory, which will help you combine them more successfully.

Many designers use the color wheel to make their choices. The wheel is divided into primary, secondary, and tertiary colors. The primary colors are red, blue, and yellow, and when mixed create the secondary colors, green, orange, and purple. In this way, the primaries blue and red produce secondary purple; red and yellow produce secondary orange; and yellow and blue produce secondary green. Tertiary colors are produced by mixing adjacent primary and secondary colors.

The color wheel can help you to create harmonious and contrasting schemes. For example, colors directly opposite one another on the wheel, such as yellow and purple or red and green, are considered to be "complementary." When placed next to each other, these contrasting colors create a sense of vibrancy and excitement.

Colors that sit next to each other on the wheel are know as "harmonious" or "analogous colors" and create a sense of order. Examples of harmonious colors are blue, purple, and pink, and green, yellow, and pale orange. Harmonious colors can create different moods, depending on whether you choose hot reds and oranges or cool blues and greens.

Triadic color schemes are created by selecting three colors that are spaced equally apart on the wheel. Green, orange and purple is one example. The contrasting hues can create eye-catching combinations.



ABOVE The color wheel
Frequently employed by garden designers, the color wheel is a simple visual device that shows how to combine colors successfully, whether you want a vibrant scheme or a muted, harmonious grouping.

ABOVE Triadic colors
Green, orange, and purple are triadic colors. Using them together creates a sense of exuberance, as shown by the fall shades of this group of shrubs.

ABOVE Harmonious combination
This border combines adjoining colors: the pale pink *Dictamnus purpureus*, purple-pink *Allium* 'Purple Sensation', and a burgundy-red *Berberis* at the back.

ABOVE Tints and shades
This scheme of pale mauve campanulas, darker purple phlox, and deep pink geraniums, uses tints of mauve together with pink to create a balanced scheme.

LEFT Complementary colors
Contrasting blue-purple forget-me-nots and bright yellow lily-flowered tulips show how hues on opposite sides of the wheel produce an exciting contrast that draws the eye.

ABOVE **Hot fiery border**
Hot-hued plants in shades of red, orange, and yellow are guaranteed to brighten up a garden. This fiery border is perfect for a sunny spot.

Tints and shades

As well as selecting colors from the color wheel, also consider the effects of tints, shades, and tones. As a rule, pure hues or saturated colors are more intense, while colors that have been mixed together are less vibrant. More subtle colors can be created by lightening colors using white to create a tint, or darkening them by adding black to create a shade. When gray is added to a hue it creates a tone.

Tints and shades can be used as transitional colors between stronger hues and help to blend one color into another. However, too many muted shades can look a bit lifeless, so ensure you inject some stronger colors into your planting schemes to create highlights.

Creating moods and focal points with color

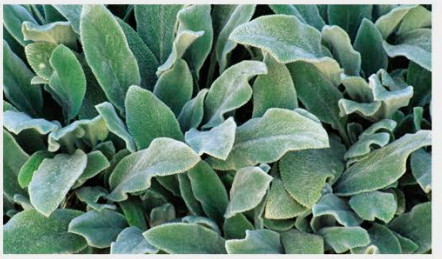
Color can convey a mood or message, and has a powerful effect on the atmosphere in a garden. For instance, vivid, hot colors, such as crimson, scarlet, magenta, golden yellow, and orange, generate a feeling of excitement, while cool colors like pale blue, pale pink, mauve, muted grays, and blue-greens create a tranquil feeling. Use these colors to produce different moods in your garden, perhaps creating a sizzling scheme of hot hues by the house, and cooler

BELOW **Cool pastel shades**
The purple flowers of *Salvia* x *sylvestris* 'Mainacht' and the deeper purple leaves of *Persicaria microcephala* 'Red Dragon' contrast with green grasses and green-flowered *Angelica archangelica*. The silvery leaves of *Heuchera* 'Beauty Color' are also veined with purple, thus continuing the silver-purple theme.

TEXTURE AND PATTERN

Mixing contrasting plant textures creates a lively effect in a border. Combine glossy and matte, or furry and rough foliage to make an impact. Look, too, at leaf patterns and match a variety of shapes and sizes to add to the interest.

Shiny and glossy
Many hollies (*Ilex*) have glossy foliage that reflects light. Their spiny leaves also add impact to a border, or they can be used as focal plants.



Soft and furry
Plants such as lambs ears (*Stachys byzantina*) and sages have a compelling, tactile quality. Plant them at the front of a border where they are easy to reach and enjoy.

Rough and crinkled
The coarse-textured leaves of this decorative vine (*Vitis coignetiae*) are held on twisted, gnarled stems that wrap around its support.

Lacelike tracery
The soft, feathery foliage of artemisia provides a foil for larger-leaved plants that like the same sunny conditions, such as hylotelephiums.

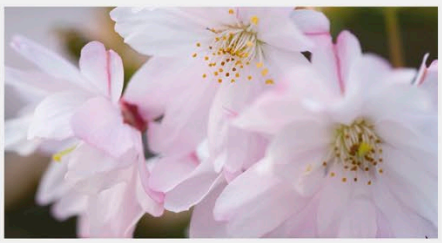
YEAR-ROUND INTEREST

When choosing plants for your garden, try to include a selection of feature trees and shrubs that have more than one season of interest. There is a wide range of trees and shrubs, both deciduous and evergreen, that perform for most of the year.

Cornus alba
A deciduous shrub with white flowers in late spring, as well as striking red shoots in winter. The leaves turn red or orange in fall.

***Mahonia* x *media* 'Charity'**
Mahonias have shiny, evergreen foliage, plus yellow flowers and purple or black fruits. 'Charity' has scented yellow flowers in winter.

Nandina domestica
The leaves of this evergreen shrub have red tints in spring and fall. Small, white summer flowers are followed by bright red berries.



***Prunus* x *subhirtella* 'Autumnalis Rosea'**
This cherry tree has tiny, pale pink flowers that appear in winter. The green leaves are bronze when young, turning golden-yellow in fall.

tones in a shady woodland area at the far end of the garden. Another option is to use the same bed or border to change in mood as the seasons progress, with bright daffodils and tulips in spring, followed by herbaceous summer planting in blues, purples, pale pinks, and whites, and then fiery foliage color in the fall.

Single-color-themed borders, whether white and cream or varying shades of yellow, look highly sophisticated and produce a satisfying cohesion. The restricted plant choices can also make designing a little easier.

You can also use color to draw attention to a particular feature or planting area. To produce this effect, ensure your plants contrast with the surroundings to increase their visibility. For example, a single, bright orange plant against a recessive background color, such as green or blue, will create an effective accent. Planting schemes that combine swaths of warm and cool colors also work well, with the cooler colors providing a foil for the hot hues.

You can also exploit the way in which colors can alter perceptions of distance. For instance, bright reds and oranges planted at the end of a garden have a foreshortening effect, making the garden appear shorter, while pale colors can make the garden seem longer.

The effects of light and shade

The way that we perceive color is influenced by the amount of light it receives. Sunny borders will make colors appear bolder and brighter, while shady areas enhance more subtle colors and white. The colors of plants can therefore change depending on their location, the degree of shade cast on them, and on the time of day. For example, pale colors that produce beautiful effects in the early morning or evening may be bleached out by strong midday sunlight. Bear this in mind if you tend to use your garden at a particular time of day. If you work and sit outside mainly in the evenings, choose white and pale flowers that take on a luminous quality in the fading light.

Choose colors that produce the best effects for different areas of the garden. Plant reds, oranges, bright pinks, and yellows in sunny spaces, as they will look muddy in the shade. Nature often makes this choice for you, as many hot-hued flowers need a sunny spot to thrive. Woodland plants, on the other hand, tend to produce flowers in whites, pastel shades of yellow, pink and purple, and blues, all of which show up better in shade.

Creating a succession of year-round color

When selecting plants, try to include a range that flower or are at their peak at different times of the year to sustain the interest. This is particularly important in small gardens, where the planting is on view year-round.

Consider the merits of each plant, including its size, habit, leaf shape, texture and color, flowers, and fruit. For a prolonged display, focus on foliage, either evergreen for constant color, or deciduous, which in most cases endures from spring to fall. This leafy mix provides a backdrop for the succession of flowers that appear. When choosing flowering plants, remember that many have beautiful seedheads, including love-in-a-mist (*Nigella*), poppies, hylotelephiums, sedums, and eryngiums, that provide two seasons of interest. Also use containers to add an extra dimension to borders and patio displays; one large planter can be used for four different seasonal displays.

Spring

When spring makes a welcome appearance, the garden is soon awash with color. Some is provided by spring-flowering trees and shrubs, such as amelanchiers, ornamental cherries, apples, plums, and almonds (*Prunus*), magnolias, some viburnums, camellias, and forsythias, as well as a host of tough rock

Spring match
Create a balanced display in your borders with a mixture of tulips, such as 'Bleu Aimable', scented biennial wallflowers (*Erysimum*), and dainty violas providing color in the foreground.

plants, including aubretias, saxifrages, and violas. Add to these a selection of bulbs and corms, starting with snowdrops (*Galanthus*) in late winter or early spring, and followed by crocuses, grape hyacinths (*Muscari*), daffodils (*Narcissus*), and tulips (*Tulipa*). As the majority of these bold displays of bulbs die down, they are followed by spring-flowering azaleas and rhododendrons which provide a wealth of colors, including magenta, pink, crimson, scarlet, golden yellow, and white. As the new leaves unfurl in late spring, blue ceanothus and the scented flowers of viburnums and lilacs enhance the spring garden further.

Summer

As temperatures rise and light levels increase, the garden is filled with a profusion of perennials, annuals, and biennials. Not many trees put on their best performance in summer, but shrubs are a key source of color. Roses start to bloom early in the season, many continuing well into fall. Other beautiful summer-flowering shrubs include sweetly scented mock oranges (*Philadelphus*), lavender, hibiscus, and the flowering dogwoods (*Cornus*). Even those that flowered in spring still play their part by providing a leafy backdrop to the flowers that offer the main show at this time of year.

Many climbers are also in full swing in summer. There are a vast number of clematis species and hybrids to choose from, providing color in the garden from early summer to late in the season, while jasmine, honeysuckle, and the frothy flat heads of climbing hydrangea (*Hydrangea petiolaris*) are other star performers.

Perennials are the real stars of the summer border. There are thousands to choose from, including early summer-flowering aquilegias, and many geraniums and lupins, followed by campanulas, salvias, achilleas, and hemerocallis, with heleniums, rudbeckias, and echinaceas appearing later in the season. Biennials, such as foxgloves, make great partners for shade-loving perennials, while hardy and half hardy annuals produce an explosion of color in borders and container displays.

Hardy annuals, such as Californian poppies (*Eschscholzia californica*), annual mallows (*Malope*), and the shoo-fly plant (*Nicandra*) flower for months on end, offering great value for money, and self-seeding to produce a repeat performance the following summer. Together with half-hardy annuals, like cosmos, impatiens, lobelia, and petunias, they provide color throughout the season, often only ceasing to flower when the frosts arrive in fall.

Fall

As summer fades, the foliage of many trees and shrubs flares into the fiery colors of fall. Some of the best choices for this seasonal display are maples, some cherries, amelanchiers, liquidambars, cotoneasters, sorbus, nyssa, and most forms of smoke bush (*Cotinus*).

Late-flowering perennials, such as Michaelmas daisies (*Symphyotrichum*) and chrysanthemums, as well as dahlias with their rich variety of flower shapes and colors, brighten up the garden until the arrival of the first frosts. Grasses are also key features of these cooler months. Pampas grasses (*Cortaderia*), fountain grasses (*Pennisetum*), and *Stipa calamagrostis* produce feather- and brush-like seedheads at this time of the year.

Winter

During winter, flower interest is limited, but valuable sources include the scented blooms of winter box (*Sarcococca*) and witch hazels (*Hamamelis*). Bold sculptural shapes and foliage color provided by evergreens is of most importance now, with conifers, boxwood (*Buxus*), and ivy (*Hedera*), coming into their own.

Deciduous trees and shrubs also play an important role, their intricate skeletons of stems clearly visible at this time of year. Think, too, about bark color and texture; white-stemmed birches (*Betula*) and the polished coppery-brown stems of *Prunus serrula* are favorite trees, while brightly colored dogwood (*Cornus*) and willow (*Salix*) stems make exciting focal points. Enhance the winter scene further with berried shrubs, such as hollies (*Ilex*), pyracanthas, and sorbus.

Summer profusion
Perennials often lead the border chorus at this time of year. Crocosomias and veronicastrums provide color and form, with the pinky-purple domes of stately eupatoriums offering background color.

Fall brights
Most perennials die down at this time of year, but a few leave their best performance till last. Hylotelephiums, asters, and symphyotrichums are key features of fall borders, here offset by buff grasses and red-leaved *Euonymus alata*.

Frosted features
Winter is a quiet time in the garden, but there is still beauty to be found in the form of stark borders filled with frost-encrusted grasses and the enduring seed-heads of perennials such as hylotelephiums and sedums.

BASIC PLANTING TECHNIQUES

Once you have planned your garden, and assessed the aspect and soil, you can begin planting. Giving new plants a good start by improving soil will result in strong, healthy specimens that put on a display year after year. Choose a fine day when the soil is not frozen or waterlogged and, before starting, make sure the soil is free of weeds. Water all plants well in preparation and water them again after planting.

Choosing healthy plants

Before going to the garden center or nursery, make a list of your chosen plants, and try to stick to it, to avoid making impulsive purchases. If some of the plants are not available, remember to check the eventual size and required growing conditions of any substitutes to make sure that they will fulfill your needs.

Check each plant to ensure you have chosen the healthiest specimen. Look at the leaves and stems for signs of pests and diseases, and reject any plant with wilted foliage. Then turn over the pot and check to see if there is a mass of roots growing through the drainage holes, a sign that the plant is "root bound" and has been growing in the pot for too long. Finally, select plants with lots of leafy stems and plump buds.

Preparing the ground

It is always wise to take a few hours to prepare the soil well before you plant. Clear the site of any large stones and remove all weeds, ensuring that you dig out the whole root system of perennial weeds, like dandelions. Start by hand-weeding the site.

Remove the weeds
When weeding, try to remove the root systems completely to prevent the weeds from growing back. Pernicious weeds, such as ground elder and bindweed, may need to be treated with a weed killer.

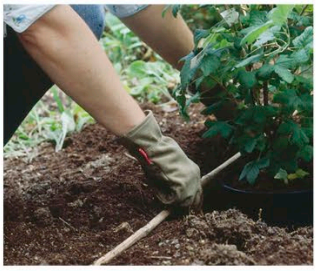
Feed the soil
When making a new bed or border, enrich the soil by digging in well-rotted organic matter, such as manure or garden compost, before planting. Apply organic matter as a mulch around plants on existing beds.

You can apply a weed killer, if necessary, to tackle pernicious weeds such as bindweed, ground elder, Japanese knotweed, horsetail, nettles, and brambles. If weeds are really problematic, consider covering the site with some old carpet or plastic sheeting for a few seasons. This forms a physical barrier against settling weed seeds, and the lack of light and moisture prevents weed growth. When the site has been cleared, enrich the soil with organic matter, such as well-rotted manure or garden compost. On a large plot, dig a series of trenches to the depth of a spade across the area and add manure to the base of each trench. Alternatively, spread an 3in (8cm) layer of organic matter over the border, and dig it into the top 6in (15cm) of soil. Dig in some horticultural grit to heavy clays to improve drainage. Finally, rake the surface.

PLANTING A PERENNIAL OR SHRUB

Shrubs form the backbone of a garden, providing permanent structure, while most perennials die down in winter and emerge again in spring. Plants grown in containers can be planted at any time of year, but avoid times when the ground is frozen or excessively wet or dry. Also, prepare the soil well before you start (see above), so your plants establish quickly and produce healthy growth.

1 Make a planting hole
First, water the plants well. Dig out a planting hole for each plant, making sure that it is twice the diameter of the container and a little deeper. Fork the bottom and sides of the hole, and add some controlled-release fertilizer to the excavated soil.



2 Check planting depth
Remove the plant from its pot, teasing out the roots if they are congested. Use a cane to check that the plant will be at the same depth as it was in its pot. Put the plant in the hole and steadily trickle in water as you backfill with soil, firming as you go.

3 Water and mulch
Water the plant. Spread a mulch of organic matter around the plant, avoiding the stems, to conserve moisture and suppress weeds. Water plants in dry spells until fully established. Each spring, rake in a general-purpose fertilizer around the plant.

PLANTING DEPTHS

Most plants need to be planted at the same depth as they were in their pots or, if they are bare-root trees or shrubs, plant them at the depth they were growing at in the field, indicated by a dark soil mark on the stems. Among the exceptions are bearded irises (below); their rhizomes will rot if buried so they should be planted with them exposed. Sun-loving shrubs and perennials, such as verbascums and sedums, also thrive when planted slightly above the soil. Moisture-loving plants like hostas prefer to be buried a little deeper than ground level.

Planting in containers

When choosing a container, look at the range of different materials and designs available to find those that suit both your garden style and the types of plants you plan to grow.

In late spring, when all frosts have passed, plant your summer bedding outside in containers, window boxes, and hanging baskets. The method for planting containers and window boxes differs slightly from that of hanging baskets (see below) and they require watering daily. If you have less time to spend watering and feeding, opt for pots of drought-tolerant shrubs, such as hebes, lavenders, and phormiums, or rock plants, like sedums and houseleeks (*Sempervivum*).

Trees and large shrubs in containers add height and stature to a design. Those suitable for growing in pots include boxwood (Buxus), many dwarf conifers, *Fatsia japonica, Hydrangea serrata,* and choisyas. These will need to be watered regularly in dry spells. In spring, remove the top few inches of potting mix and replace with fresh, together with some all-purpose controlled-release fertilizer.

Choosing pot sizes

When making your container selections, choose pots of several different sizes for a traditional grouping, or opt for a series of pots of the same size and line them up for a contemporary look.

The size of your pots will affect the amount of maintenance they require. Tiny pots dry out quickly, and need watering on a daily basis in summer, unless you plant them with drought-tolerant rock plants. Larger pots hold more potting mix and therefore more moisture and nutrients, reducing the need for such frequent watering and feeding.

Material options

The material a container is made from affects both the price and the maintenance needs of the plants. Clay is a beautiful natural material, but because it is porous, it dries out more rapidly than synthetic materials or natural stone. Choose glazed clay or plastic if you want colorful pots.

Terra-cotta elegance
Natural and the perfect foil for a shrub, such as a hebe, terracotta is porous and dries out quickly. To prevent moisture loss, line with bubble wrap before planting.

Size matters
Choose a pot size that balances your chosen plants. Opt for a tall, slim container for a fountain of foliage, or a small, wide pot for a rounded shrub or planting group.

PLANTING A SUMMER CONTAINER

You can create exciting displays in containers and window boxes with easy summer flowers. Some grow quickly from seed, or you can buy plug plants via mail order or larger bedding plants from the garden center. When combining plants, try to balance the shapes, colors, and textures. This example includes red dahlias, French marigolds, and yellow bidens.

1 Add drainage material

Place a layer of broken clay pot pieces in the base of the pot to help ensure good drainage. For larger pots, you can reduce the amount of potting mix required and the weight of the container by filling the bottom third with pieces of polystyrene.

2 Plant the container

Fill the container to about 2in (5cm) from the rim with all-purpose potting mix. Work in some slow-release fertilizer granules. Water the plants about 30 minutes before planting. Tip them from their pots or trays and arrange on the soil surface.

Final effects

Plant the tallest plants at the back or in the middle of the container, and fill in around them with shorter or trailing types. Water the plants well, and continue to water regularly. To exend the flowering period, remove the faded blooms with pruning shears at frequent intervals throughout summer.

PLANTING A HANGING BASKET

Globes of flowers and foliage lend an exotic touch to patios and seating areas throughout summer. Plant a large hanging basket and hang it at about head height where you can see the colors and textures at close quarters. Hanging baskets filled with ivy, small evergreens, violas, and early bulbs also add a splash of color in fall and winter.

1 Preparing the basket

Line the basket and add a circle of plastic to the bottom to create a water reservoir. Top with a layer of potting mix. Cut crosses around the sides of the liner. Protect the trailing plants with some plastic and thread them through the crosses, as shown.

2 Planting the top

Cover the roots of the trailing plants with more potting mix, and then start planting the top of the basket. Work from the center out, with the tallest plants (such as verbena) in the middle, with compact bedding and trailing types around the edges.

Finishing touches

Fill in around the plants with potting mix and work in some slow-release fertilizer granules. Water well and add a layer of gravel over the soil to help retain moisture. Water the basket daily, even if it has rained, and deadhead regularly to extend the flower display throughout the summer.

LOOKING AFTER YOUR GARDEN

To keep your garden in peak condition, you will need to perform regular maintenance tasks throughout the year. Watering is essential for young plants and those in containers, and to win the battle against weeds you must be vigilant from spring to fall. It pays to give most plants a feed and a mulch every year—usually in spring. Woody plants may also need to be pruned to keep them in good condition.

Weeding methods

You can limit the growth of weeds by top-dressing the soil with a thick mulch or a membrane, but you will never be completely free of them. The most useful tool for removing annual weeds over a large area is a hoe; as you move it back and forth, the blade slices through the necks of weeds where the stems meet the soil. Choose a dry, sunny day for hoeing and leave the weeds on the surface to die—you can then gather them up and compost them.

Although hoeing kills annual weeds, such as chickweed and groundsel, perennial weeds, including brambles, dock, couch grass, and ground elder will survive and regrow. Use a weeder to remove those with taproots, such as dandelions, and dig out perennials with fibrous root systems using a spade or trowel. If you have pernicious weeds that you cannot remove by hand, apply a glyphosate weedkiller.

Dealing with dandelions
A weeder is the ideal tool for prying out perennial weeds with deep taproots, such as dandelions.

Slow-release watering
Drip hoses trickle water into the soil above the roots, exactly where it is most needed.

Watering

In summer, watering is the main gardening task. Young plants in beds and borders and container displays are especially vulnerable to drought, and are best watered early in the morning or in the evening when evaporation rates are low. A basic watering can is generally sufficient for small areas or containers, and fits easily under a rain-barrel spigot. For seedlings and new plants, use a can with a fine spray, so that you do not wash soil away from the roots.

If you have a large new area to water, a garden hose is a more practical option. Attach a spray nozzle to give new plantings a gentle shower, and direct the hose on the soil, rather than the leaves or flowers. An even more efficient watering method is to lay perforated hosepipes round your plants; water gradually seeps out at soil level and penetrates deeply with little waste.

Fertilizing

Once established, most plants growing in reasonably good soil need an annual application of fertilizer in spring. The type of plant food you choose and how often you apply it will be determined by your soil and what you are trying to grow. Plants require a range of essential nutrients. The primary nutrients are nitrogen (N), which plants need for leaf growth; phosphorous (P) for healthy roots; and potassium (K) for good flower and fruit production. The secondary nutrients—calcium, magnesium, and sulphur—are required in smaller amounts, while the seven trace elements, such as iron, are needed in very small quantities.

Fertilizers are either organic (derived from plants and animals) or inorganic (chemically manufactured). Most are concentrated for convenience and available

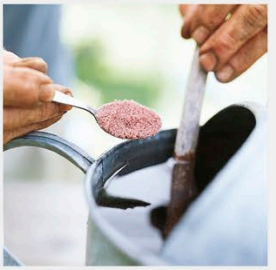
FERTILIZER OPTIONS

Most plants benefit from an application of fertilizer once a year in spring. However, some may need extra nutrients to boost them at key times, such as flowering. Always follow the manufacturer's instructions carefully because too much fertilizer, or using the wrong type for a particular plant, may have a detrimental effect. Your local garden center or DIY store will stock a selection of organic and inorganic fertilizers.

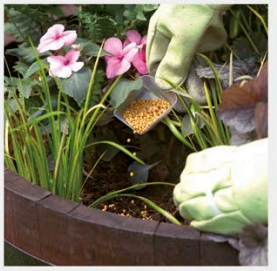
Chemical fertilizer
A balanced chemical fertilizer is used to enrich the soil at sowing or planting time. It can also be applied as an annual top dressing in the spring for all types of plants.

Organic matter
Well-rotted manure or garden compost is rich in trace elements and soil-conditioning substances. Dig it into the ground or apply it as a surface mulch.

Fish, blood and bonemeal
This organic, balanced fertilizer can be mixed into the soil when planting, and applied around plants in the spring or early summer.



Soluble food
Fast-acting soluble liquid fertilizers give bedding and container plants the nutrients they need. They can also be used on plants that need a quick boost.



Slow-release granules
These granules are activated by warmth and moisture, and provide a steady supply of nutrients for many weeks in borders and containers.

MULCH OPTIONS

Mulches reduce weed growth and conserve water, which is why they should always be applied when the ground is moist. A gravel mulch helps to keep the leaves and stems of drought-loving plants dry, and prevents them from rotting. As well as being functional, many mulches are also attractive, and produce a decorative surface for borders and containers. Recycled ground glass and dyed shells are colorful options.

Gravel
Gravel laid over landscape fabric creates a weed suppressant and a decorative foil for alpines and Mediterranean-style plantings. Plant through the fabric by cutting a cross and folding back the flaps. Apply the gravel on top after planting.

Bark chips
Available in different sizes, the smallest being the most attractive, bark breaks down slowly and makes a good weed suppressor. It also helps to conserve soil moisture, but does not supply many nutrients. Top off worn areas annually.

Garden compost
Rotted compost and manure lock moisture into the soil and help to supress weed growth. As the mulch breaks down it also releases plant foods and improves the structure of the soil.

Leaf mold
Although low in nutrients, rotted leaves help to improve the soil structure and trap moisture in. They are ideal for woodland and shade-loving plants, many of which would be mulched by leaves in their natural habitats.

as liquids, powders that you dilute in water, or granules. Organic fertilizers include pelleted chicken manure; fish, blood and bonemeal; liquid seaweed fertilizer; and homemade plant feeds, such as the diluted liquor from a wormery or fertilizers made from soaking comfrey leaves. Inorganic fertilizers include potassium sulfate and granular rose fertilizers.

Fertilizers are grouped according to the quantities of N, P, and K they contain. For example, a balanced fertilizer for general use, contains equal quantities of each primary nutrient, while a fertilizer for lawns has a higher concentration of nitrogen, and those for fruit bushes are rich in potassium.

Apply an all-purpose granular fertilizer to the soil when planting, and spread around plants in spring. Containers, baskets, and some bedding annuals may need a regular liquid feed during the growing season, or apply a controlled-release granular fertilizer when planting. Remember to follow the manufacturer's directions carefully.

Mulching

Mulches are materials that are spread on the soil surface, usually around plants. Some mulches serve a practical purpose—feeding the soil, suppressing weeds, retaining moisture, or insulating roots in winter—while others are primarily decorative. Decorative mulches include crushed glass or shells, and slate chips.

Mulches are applied at different times of the year, depending on their purpose and the plants' needs. For example, bark chips are spread over the soil surface after planting to suppress weeds, but may take nutrients from the soil as they decompose, so apply a nitrogen-rich fertilizer to compensate for this loss. Organic matter, such as farmyard manure or garden compost, helps to retain soil moisture while also fertilizing the ground. It must be laid over moist soil, either in spring (following fall and winter rains) or after watering. Apply organic mulches in a thick layer about 4in (10cm) deep, and replenish them annually as worms and soil micro-organisms will break them down throughout the year.

Composting

Disposing of your organic kitchen waste and plant prunings by composting creates an excellent eco-friendly soil improver. There is a wide range of bins available, including standard plastic composters that hold plenty of waste, and more decorative types, such as wooden models that resemble beehives.

To produce good compost, you will need the right mix of ingredients. Too much soft green material, such as grass clippings and vegetable peelings, turns the heap into a slimy mess. On the other hand, if you include too much dry woody material, such as prunings, the heap will rot down too slowly. Aim for an equal measure of green and dry ingredients and add them in layers. A good airflow is also essential to the composting process, so turn over the contents regularly.

MAKING LEAF MOLD

Leaf mold is one of the finest soil conditioners, and makes good use of fallen autumn leaves. It is very quick and easy to make, but takes at least a year to rot down and be ready for use in the garden.

1 Rake up the leaves
In fall, rake up the leaves in your garden and place them in large plastic garbage bags. If you chop them up first with a garden spade, they will decompose faster.

2 Water, tie and leave
When the bags are half full, sprinkle the leaves with water. Continue to add leaves and water again when full. Tie the bag and make a few holes with a fork to let in some air. After a year or two, the leaf mold will be ready.

Good garden hygiene

By keeping your plants in good health and checking them regularly, you can keep many pests and diseases at bay. Aim to grow your plants in the right conditions because healthy specimens are more able to withstand attacks. Remember, too, that some plants are susceptible to certain diseases so, whenever possible, buy resistant varieties.

A few simple precautions will also pay dividends. Check new plants for signs of pests and diseases to ensure that they do not introduce them to your garden, and keep all tools and equipment clean to guard against the spread of diseases. Tools such as pruners and seed trays are best cleaned with household disinfectant. You can also put up physical barriers, such as cut-off plastic bottles to help protect your plants from pests such as slugs and snails.

If a plant does succumb to a disease, first try to identify the problem to gauge its seriousness, and remove and either burn or discard infected plant material. Minor pest attacks can usually be dealt with by removing the invaders by hand. Also, tryto encourage natural predators, such as birds, frogs and toads, ladybugs, hoverflies, spiders, and lacewings into your garden, as together they will help to keep many pests under control. Pools, ponds, berried shrubs and trees, and nectar-rich open flowers will help to lure this pest army into your plot. If you have to resort to chemical pesticides and fungicides, use them sparingly and read the manufacturer's instructions carefully.

Pruning guidelines

It is not essential to prune any plant, but thinning and cutting back to varying degrees or selectively removing entire branches can be beneficial.

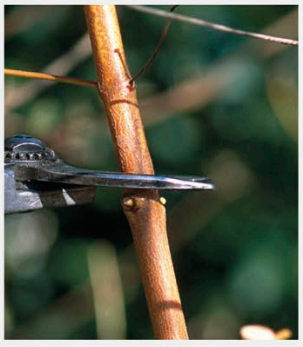
Pruning can rejuvenate old, congested specimens and help to extend the life of short-lived shrubs. It can also promote the growth of more flowering and fruiting wood, improve the shape of a plant, and reduce the incidence of disease.

Most pruning is performed annually, but if you spot dead, damaged, or diseased wood, or a sucker growing from a grafted plant, remove it immediately. A general tip is to prune plants that flower in spring just after they have bloomed, and prune those that flower in summer or fall in early spring before the buds break. Most evergreens are pruned in late spring.

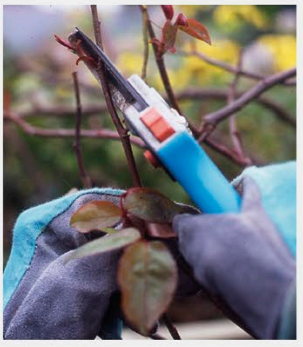
It is important to use the right tools when pruning, as they will make the task easier. The tool you will require depends on the thickness of the material you need to remove. Use sharp pruners for stems the width of a pencil or smaller, and a pruning saw or loppers for larger branches. Never prune above head height and call in a professional tree surgeon for large jobs.

MAKING PRUNING CUTS

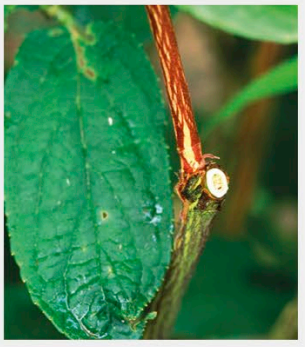
Trees, shrubs, and climbers grow in different ways, and their shoots, buds, and stems differ, too. Before pruning, identify the type of buds and shoots on the plant and their position. Buds are found at the point where the leaves are about to grow, or where they have previously been attached to the stem. When pruning, cut just above a bud; this stimulates hormones that make the bud develop into a new stem.



Cutting opposite buds
The buds of some plants are opposite each other. Prune above a pair of buds with a flat, straight cut. When the buds grow, they will produce two shoots growing in opposite directions from one another.



Cutting alternate buds
Where the buds are positioned alternately along the stems, try to prune to one that is facing outward, away from the center of the plant. Make a sloping cut above the bud, so that water runs away from it.



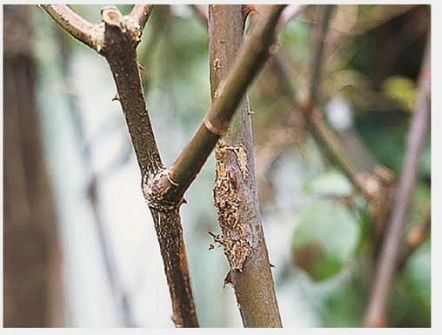
Cutting to new growth
You can recognize new growth because it looks much fresher than old wood. When pruning, cut off old wood just above a new stem, using a sloping cut so that water runs away from the young growth.

WHY PRUNE?

You can achieve many beautiful effects with careful pruning. Some plants are best trimmed lightly to create a natural look, while others can be clipped into elegant topiary. In addition, some pruning techniques encourage more flowering and fruiting stems to form.

Cutting out dead and diseased wood
Whenever you see dead or diseased wood on any woody plant, remove it immediately. If dead wood is left on a plant, disease can enter more easily and move down the stems.

Pruning for shape and form
Some plants need a gentle trim to retain their shape. This *Pittosporum tenuifolium* makes an attractive focal plant. The only pruning it requires is to retain the plant's symmetry by lightly trimming it in late spring.



Crossing and rubbing branches
Branches that rub each other can create open wounds that let in diseases. Remove one of the branches, choosing the weakest one or the stem that has suffered the most damage.

PLANT SELECTOR

The lists in this section suggest plants that are suitable for growing in a range of situations, or that have special uses or characteristics. While the plants will thrive in the conditions specified, bear in mind that much of their success depends on climate, location, aspect, and care. The list is subdivided into plant groups for each category, following the arrangement of the Plant Catalog on pages 56–496. Plants that are featured in the Catalog are followed by page numbers; refer to the Plant Dictionary for a whole genus or for a plant not followed by a number.

Plants for sandy soil

Sandy soil is often termed "light" or "hungry." It is usually well-drained, but dries out rapidly and holds low reserves of plant nutrients. Many plants have adapted to such soil by developing deeply penetrating roots. Their leaves are modified to reduce moisture loss: small and reflexed, evergreen and glossy, or covered with fine gray or silver hairs. To improve moisture retention, incorporate some organic matter when planting in fall; little watering will then be needed and plants are able to establish well before summer.

TREES

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Celtis australis, p.62
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Crataegus laevigata 'Paul's Scarlet', p.84
Genista aetnensis, p.89
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Juniperus
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Ceanothus thyrsiflorus and forms
Cistus spp. and cvs, pp.150, 152, 153, 154
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Enkianthus cernuus f. *rubens,* p.123
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Gaultheria mucronata 'Mulberry Wine', p.164
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x *Halimiocistus sahucii,* p.149
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Berkheya purpurea, p.269
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Diascia personata, p.223
Eremurus x *isabellinus* 'Cleopatra', p.220
Eryngium pandanifolium
Eryngium x *tripartitum,* p.250
Erysimum 'Bowles Mauve', p.261
Eurybia divaricata
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Gaillardia 'Oranges and Lemons', p.277
Gaillardia x *grandiflora* cvs

BELOW Hot and dry conditions
Acanthus spinosus and *Phlomis russeliana* make a perfect planting partnership on sandy soil.

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Nepeta 'Six Hills Giant', p.240
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Aethionema 'Warley Rose', p.362
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Gaultheria procumbens, p.373
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Saponaria ocymoides, p.364
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Allium aflatunense, p.382
Allium atropurpureum, p.392
Allium 'Gladiator', p.392
Allium 'Globemaster', p.392
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Anemone coronaria De Caen Group 'Mr Fokker', p.403
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Hippeastrum 'Black Pearl'
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Gazania pinnata
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ALOES, p.493
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Furcraea parmentieri
Rebutia hybrida and cvs, pp.483, 484, 486, 487, 496

Perovskia 'Blue Spire'

Antirrhinum majus

Helianthemum 'Wisley Primrose'

Eccremocarpus scaber

RIGHT A garden on sandy gravel
Alliums and lavenders thrive on light, sandy soil and are ideal for gravel gardens in dry areas.

Plants for clay soil

Clay soil is usually wet, glutinous and heavy in winter, and during drier summers it can shrink and crack, damaging plant roots. Whether establishing a new garden on clay or renovating an older one, always choose plants that will grow well in this type of soil. Prepare the planting area thoroughly, digging the soil in fall, then leaving it over winter to allow the weathering effects of frost and winter rain to break down large clods. Dig in organic matter, and grit or sharp sand to increase drainage. Plant in early spring, at the beginning of the growing season, to avoid losses over winter.

Caltha palustris 'Flore Pleno'

Anemone hupehensis 'Hadspen Abundance'

Kalmia latifolia

Viburnum opulus

LEFT A waterside planting
Yellow skunk cabbage (*Lysichiton americanus*) and marsh marigolds (*Caltha palustris*) flourish together in the clay soil beside this stream.

TREES

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Betula nigra, p.78
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Drimys winteri, p.73
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Oxydendrum arboreum, p.76
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Prunus serrula, p.78
Pterocarya fraxinifolia
Quercus palustris, p.66
Quercus robur
Quercus suber, p.78
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Salix x *sepulcralis* var. *chrysocoma*, p.69
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Choisya ternata SUNDANCE ('Lich'), p.148
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CORNUS, p.126
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Photinia x *fraseri* 'Red Robin', p.111
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Ribes sanguineum 'Koja', p.146
Ruscus aculeatus, p.167
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Salix exigua, p.112
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Sambucus racemosa 'Plumosa Aurea', p.139
Spiraea japonica 'Anthony Waterer', p.154
Symphoricarpos albus var. *laevigatus*, p.142
Tetrapanax papyrifer, p.120
Viburnum x *bodnantense* 'Dawn', p.143
Viburnum lentago
Viburnum opulus and cvs, p.162
Viburnum tinus 'Eve Price', p.143

CLIMBERS AND WALL SHRUBS

Celastrus scandens
Garrya elliptica 'James Roof', p.211
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Rosa filipes 'Kiftsgate', p.184
Vitis coignetiae, p.209

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Anemone hupehensis and cvs
Anemone tomentosa
Bergenia spp. and cvs, pp.255, 256, 280
Chrysosplenium macrophyllum, p.256
Doronicum orientale 'Magnificum', p.263
Eupatorium maculatum 'Reisenschirm', p.221
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Geranium 'Orion', p.280
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Lythrum salicaria 'Feuerkerze', p.234
Mimulus guttatus
Omphalodes cappadocia 'Cherry Ingram', p.261
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Matteuccia struthiopteris, p.443
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Ranunculus lingua, p.444
Sagittaria latifolia, p.434
Thalia dealbata

TENDER AND EXOTIC PLANTS

Perennials

Cyperus papyrus, p.478

Plants for neutral to acidic soil

Some plants, notably camellias, rhododendrons, and most heathers, grow naturally in regions such as open woodlands, hillsides or moorlands where the soil is neutral to acidic, and are intolerant of alkaline soils such limestone or chalk. They are often termed "lime-haters" or "acid-lovers." Before planting, work in some acidic potting mix or humus. After planting, keep woody plants well mulched. In drier regions, check water needs regularly.

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Acer grosseri, p.78
Acer palmatum and cvs, pp.78, 89, 90, 123, 138, 156
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Oxydendrum arboreum, p.76
Pinus densiflora
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Pinus pumila
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Tsuga heterophylla

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Amelanchier lamarckii, p.110
Andromeda polifolia 'Compacta', p.333
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Vaccinium (most), pp.150, 163, 165, 351
WITCH HAZELS, p.118
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Asteranthera ovata
Berberidopsis corallina, p.202
Crinodendron hookerianum, p.202
Desfontainia spinosa, p.203
Mitraria coccinea, p.193

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Dianella tasmanica, p.239
Ourisia coccinea, p.269
Smilacina racemosa, p.223
Tolmiea menziesii
Trillium spp., pp.255, 260, 350
Uvularia grandiflora, p.262

Grasses and Bamboos

Deschampsia cespitosa 'Gold Tau', p.289
Molinia caerulea subsp. *arundinacea* 'Transparent', p.286
Molinia caerulea subsp. *caerulea* 'Variegata'

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Adiantum spp., pp.291, 292
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ANNUALS AND BIENNIALS

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Cyananthus spp., pp.359, 369
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Calanthe striata, p.275
Caulokaempferia petelotii
Centropogon cordifolius
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Nepenthes x *hookeriana,* p.473
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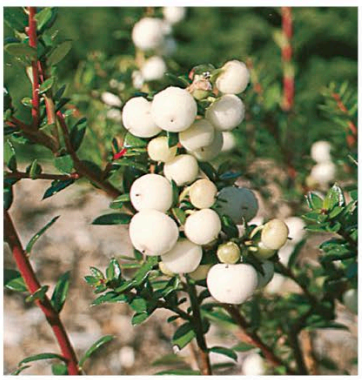

Gaultheria mucronata 'Wintertime'

Fothergilla major

BELOW A carpet of heather
Heathers (*Erica*) create dramatic sweeps of winter color in this heather garden. The majority of heathers thrive in well-drained, acidic soil in full sun.

Plants for limestone

Limestone regions are rich in wildflowers and wildlife, and where there is a reasonable depth of topsoil, a wide range of garden plants can be grown. However, often there are only a few inches of soil over bedrock, and here there is an increased risk of drought in summer. It may be necessary to excavate planting holes and incorporate organic matter to increase plants' chances of survival. On well-drained soil, plant in fall or spring; on wetter soil, delay planting until spring. Keep all young woody plants well mulched and watered until established.

TREES

Acer negundo 'Variegatum', p.74
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Passiflora caerulea, p.204

BELOW Early summer scent
A lilac, here combined with deutzia and peonies, grows in the shelter of a wall. Lilacs prefer alkaline soil, as long as it is well-drained.

Philadelphus 'Dame Blanche'

Lathyrus vernus

BELOW Bright yellow display
Achillea 'Moonshine' is a perennial that thrives in limestone soil and will withstand periods of drought. In summer, the flowers attract bees and butterflies.

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Anemone hupehensis
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Origanum dictamnus
Papaver burseri
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Allium neapolitanum Cowanii Group, p.409
Allium 'Gladiator', p.392
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Allium 'Mount Everest', p.385
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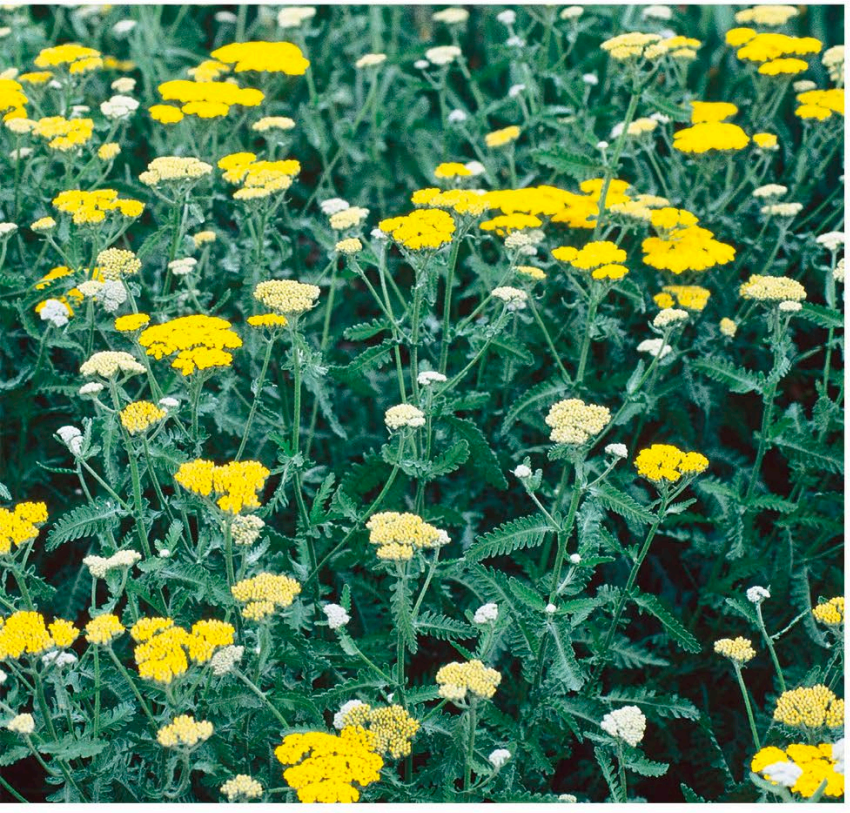
Shrubs

Nerium oleander, p.455

Cacti and succulents

Furcraea parmentieri



BELOW Colorful crevices
Naturally at home in cracks and crevices, these *Saxafraga* form neat mounds of color. They are ideal for sunny, well-drained rock gardens and alpine gardens.

Plants for coastal sites

In coastal regions, salt from sea spray is carried a considerable distance inland on the wind, causing problems for many plants. However, some can tolerate high salt levels, and have hard-surfaced or glossy leaves with low absorbency levels, or foliage covered with fine hairs that prevent salt from reaching the surface. Coastal gardens are often exposed, so protect plants with hedges or fences. Prepare sandy soil by incorporating organic matter and garden loam, to encourage deep root penetration, and use dense ground-cover plants to stabilize the sand and keep root areas cool.

TREES

Acer pseudoplatanus and cvs, pp.65, 73, 84
Alnus incana, p.61
Arbutus andrachne
Arbutus unedo, p.93
Castanea sativa
Cordyline australis
Crataegus laevigata 'Paul's Scarlet', p.84
Eucalyptus coccifera, p.68
Eucalpytus gunnii, p.68
Fraxinus excelsior
Ilex aquifolium cvs, pp.92, 94
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Populus alba, p.60
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x *Cuprocyparis leylandii* cvs, pp.95, 99
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Pinus contorta var. *latifolia*, p.101
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Cytisus scoparius subsp. *maritimus*
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Elaeagnus umbellata, p.113
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Erica cinerea 'Eden Valley', p.166
Escallonia 'Donard Seedling', p.131
Escallonia rubra 'Crimson Spire'
Euonymus japonicus and cvs
Euphorbia characias subsp. *characias*, p.147
Fabiana imbricata f. *violacea*, p. 204
Felicia amelloides 'Santa Anita', p.157
Fuchsia magellanica, p.154
Fuchsia 'Riccartonii', p.154
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Genista hispanica, p.160
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Lonicera ligustrina var. *pileata*, p.167
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Olearia ilicifolia, p.130
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Ozothamnus ledifolius, p.151
Parahebe perfoliata, p.271
Phillyrea latifolia
Phlomis fruticosa, p.160
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Pyracantha 'Orange Glow'
Rhamnus alaternus 'Argenteovariegata'
Rosa rugosa, p.176
Rosmarinus officinalis, p.157

Sambucus racemosa and cvs, p.139
Spartium junceum, p.140
Spiraea japonica 'Candlelight'
Tamarix ramosissima, p.114
Ulex europaeus 'Flore Pleno'
Viburnum tinus
Yucca gloriosa, p.132

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Ercilla volubilis, p.192
Fallopia baldschuanica, p.208
Garrya elliptica 'James Roof', p.211
Hedera canariensis
Muehlenbeckia complexa
Schisandra rubriflora, p.202
Solanum crispum 'Glasnevin', p.204
Trachelospermum jasminoides, p.195
Tropaeolum tuberosum var. *lineamaculatum* 'Ken Aslet', p.207
Wisteria sinensis

PERENNIALS

Anaphalis margaritacea, p.231
Anchusa azurea 'Loddon Royalist', p.241

BELOW Coastal retreat
Dramatic agapanthus and architectural phormiums are ideal plants for exposed coastal sites with mild winters.

Artemisia ludhoviciana 'Valerie Finnis', p.274
Berkheya purpurea, p.269
Centaurea hypoleuca 'John Coutts', p.265
Centranthus ruber, p.248
Crambe maritima, p.264
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Libertia ixioides 'Goldfinger', p.277
Myosotidium hortensia, p.271
Nepeta 'Six Hills Giant', p.240
Osteospermum jucundum, p.265
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Verbascum 'Cotswold Beauty', p.246

Euphorbia characias subsp. *characias*

Armeria maritima 'Vindictive'

Felicia amelloides 'Santa Anita'

Veronicastrum virginicum 'Fascination', p.220
YARROW, p.247

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Carex flagellifera, p.289
Chionochloa rubra, p.285
Cortadera richardii, p.284
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Eragrostis curvula 'Totnes Burgundy', p.285
Miscanthus sinensis cvs, pp.285, 286
Pseudosasa japonica, p.287
Stipa tenuissima, p.288

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Antirrhinum majus and cvs, pp.306, 310, 320
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Bassia scoparia f. *trichophylla*, p.316
Calendula officinalis and cvs, pp.321, 322, 325
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Dianthus chinensis cvs, pp.305, 307
Cleretum bellidiforme
Duranta erecta, p.319
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Achillea filipendulina 'Parker's Variety'

Eryngium variifolium

Sedum spathulifolium 'Cape Blanco'

Gilia capitata, p.314
Jacobaea maritima 'Silver Dust', p.315
Lavatera trimestris cvs, p.305
Limnanthes douglasii, p.321
Matthiola incana Giant Excelsior Mix, p.303
Rhodanthe chlorocephala subsp. *rosea*, p.303
Tagetes spp. and cvs, pp.308, 320, 324

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Achillea clavennae, p.359
Aethionema grandiflorum, p.338
Armeria maritima 'Vindictive', p.365
Aubrieta x *cultorum* 'Argenteovariegata', p.354
Dianthus deltoides
Draba aizoides
Geranium sanguineum, p.340
Iberis sempervirens, p.332
Origanum laevigatum, p.340
Oxalis enneaphylla
Parahebe catarractae, p.342
Phlox subulata 'Marjorie', p.365
Pulsatilla vulgaris, p.334
Saxifraga paniculata
Sedum spathulifolium 'Cape Blanco', p.375
Sempervivum arachnoideum, p.377
Silene schafta, p.346
Thlaspi cepaeifolium subsp. *rotundifolium*, p.352

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Agapanthus spp. and cvs, pp.240, 241, 242
Crinum spp. and cvs, pp.383, 385
CROCOSMIA, p.410
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Eucharis amazonica, p.414
Galtonia candicans, p.383
Hyacinthus orientalis and cvs, pp.403, 407, 415
Hymenocallis
Nerine spp. and cvs, pp.413, 414
Scilla spp. and cvs, pp.413, 416, 419, 420, 423
Sprekelia formosissima, p.402
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Nerium oleander, p.455

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Pandorea jasminoides, p.459
Pyrostegia venusta, p.464
Solandra maxima, p.464

Perennials

Anthurium andraeanum, p.470
Peperomia obtusifolia 'Variegata', p.474
Pilea cadierei, p.465
Tradescantia fluminensis

Cacti and succulents

AGAVE, p.482
Furcraea parmentieri
Lampranthus glaucoides, p.496

Trees and shrubs for exposed sites

In cold-climate gardens, particularly those exposed to strong winter winds, only the hardiest plants thrive without the protection of a windbreak. Where providing one is not practical, it is essential to establish a basic framework of trees, shrubs, and conifers that are fully hardy. Carefully positioned within the garden, in groups, they provide sheltered situations where less hardy plants can be grown, while still retaining a degree of openness if desired.

ABOVE Vibrant fall color
Cotinus species and hybrids make a dramatic statement in fall. They thrive in full sun or partial shade, and tolerate exposed sites.

TREES

Acer platanoides and cvs, pp.60, 67
Acer pseudoplatanus
Betula utilis subsp. *jacquemontii*
Crataegus laevigata 'Paul's Scarlet', p.84
Crataegus x *lavallei* 'Carrierei'
Fagus sylvatica and cvs, pp.61, 64, 79
Fraxinus excelsior 'Jaspidea', p.60
Fraxinus ornus, p.71
Laburnum x *watereri* 'Vossii', p.84
Populus tremula
SORBUS (many), p.91
Tilia cordata

Conifers

Chamaecyparis obtusa and cvs, pp.104, 105
Chamaecyparis pisifera 'Filifera Aurea', p.105
Juniperus communis 'Hibernica'
Juniperus x *pfitzeriana* and cvs, p.105
Picea breweriana, p.99
Pinus nigra subsp. nigra, p.98
Pinus sylvestris, p.78
Taxus baccata and cvs, pp.101, 102, 105
Tsuga canadensis, p.102
Xanthocyparis nootkatensis

SHRUBS

Amorpha canescens
Arctostaphylos uva-ursi, p.376
Berberis darwinii, p.111
Berberis 'Rubrostilla', p.162
Berberis x *stenophylla*, p.127
Buddleja davidii 'Royal Red'
Calluna vulgaris and cvs, p.166
Chaenomeles speciosa, p.142
Cornus alba 'Sibirica', p.143
Corylus maxima 'Purpurea', p.115
Cotinus coggygria GOLDEN SPIRIT ('Ancot'), p.116
Cotinus 'Flame', p.117
Cotoneaster 'Gnom'
Cotoneaster lacteus, p.117
Cotoneaster salicifolius, p.142
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Euonymus europaeus 'Red Cascade', p.140
Euonymus hamiltonianus, p.142
Euonymus hamiltonianus subsp. *sieboldianus*, p.142
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Mahonia aquifolium, p.148
Philadelphus 'Beauclerk', p.127
Philadelphus 'Belle Etoile', p.128
Prunus laurocerasus 'Otto Luyken', p.145
Rhododendron groenlandicum, p.145
Ribes sanguineum 'Koja', p.146
Rubus thibetanus, p.143
Salix purpurea
Sambucus nigra f. *porphyrophylla* 'Guincho Purple'
Spiraea japonica 'Goldflame', p.156
Spiraea x *vanhouttei*, p.145
Symphoricarpos x *chenaultii* 'Hancock'
Ulex europaeus 'Flore Pleno'
Viburnum x *burkwoodii*, p.122
Viburnum opulus 'Xanthocarpum'
Viburnum tinus 'Eve Price', p.143

Climbers and shrubs for shady walls

Against cold, north- or east-facing walls, it is essential to choose climbers that grow naturally in shade or semishade. These provide reliable and effective foliage cover, and some have attractive flowers. A few climbing roses flower reasonably well in partially shaded situations and, together with climbers and shrubs, add color to the backs of borders. Shade-tolerant plants prefer moist, woodland-type soils; when planting, dig in organic matter, such as leaf mold.

SHRUBS

Azara microphylla, p.118
CAMELLIAS, pp.120–121
Chaenomeles speciosa 'Moerloosei', p.122
Chaenomeles x *superba* 'Rowallane', p.147
Choisya ternata, p.122
Cotoneaster lacteus, p.117
Cotoneaster salicifolius, p.142
Daphne bholua 'Jacqueline Postill', p.143
Drimys winteri, p.73
Eucryphia x *nymansensis* 'Nymansay', p.73
Fatsia japonica
Jasminum nudiflorum, p.144
Mahonia japonica, p.144
Mahonia x *media* 'Charity', p.118
Muehlenbeckia complexa
Osmanthus decorus
Pyracantha spp. and cvs, pp.118, 141
Ribes laurifolium, p.165
Rosa 'Albéric Barbier', p.184
Rosa 'Ballerina', p.178
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x *Fatshedera lizei*, p.211
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Hedera colchica 'Sulphur Heart', p.211
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Pileostegia viburnoides, p.196
Schisandra rubriflora, p.202
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BELOW Green-themed shade bed
Hostas and acers thrive in the shady conditions at the foot of sunless walls, providing attractive foliage patterns.

Drought-tolerant plants

Hot, sunny locations and free-draining, sandy soils demand plants that tolerate dry conditions. Drought-resistant plants will survive the increasing number of long, dry periods that some areas are now experiencing even in normally wet seasons. All the plants listed here have adapted to thrive in arid conditions, and need little or no additional irrigation once established. Avoid planting them in waterlogged clay soils, in which they will quickly decline and die.

Agapanthus praecox subsp. *orientalis*

Miscanthus sinensis 'Cosmopolitan'

ABOVE Water-wise gardening
Perovskia and *Echinops ritro* 'Veitch's Blue' can withstand periods of drought, while still providing a spectacular display.

TREES

Arbutus unedo, p.93
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Hedychium 'Tara', p.220
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Cacti and succulents

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ALOES, p.493
Echeveria montana
Echeveria pulvinata
Furcraea parmentieri
Kalanchoe laetivirens

Plants for hedges and windbreaks

Plants for hedging are often selected for their ornamental qualities, but there are other aspects to consider. Boundary hedges can provide visual privacy, or screen unsightly buildings; they may also be bushy or thorny to keep out animals or intruders. Make sure that plants for screening will grow to the required height, and select conifers or evergreen shrubs for year-round effect. In exposed sites, trees and deciduous shrubs can be used as windbreaks; two or three staggered rows are more effective than a single, closely planted one.

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x *Cuprocyparis* 'Castlewellan', p.99
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Rosa 'Céleste', p.173
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Eupatorium maculatum
Filipendula camtschatica
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Arundo donax
Chimonobambusa tumidissinoda, p.287
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Hibiscus rosa-sinensis

Forsythia x *intermedia* 'Lynwood'

Rosa gallica var. *officinalis* 'Versicolor'

Lavandula angustifolia 'Hidcote'

RIGHT Formal definition
In this mature garden, yew hedges form green walls, providing shelter as well as excellent structure. Short boxwood hedges give a formal edge to the flower beds.

Architectural plants

Plants that stand out and draw the eye with their strong, distinctive appearance are termed "architectural" plants. They give character and substance to a garden, and help form the basic framework. Most are trees, conifers, and shrubs, which provide a permanent effect throughout the year, and they usually have a strong shape, such as vertical or conical forms of conifer, or bear striking foliage, such as giant-leaved gunneras and spiky phormiums.

Agave americana 'Marginata'

Yucca gloriosa

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Astelia chathamica, p.242
Begonia grandis subsp. *evansiana,* p.278
Berkheya macrocephala, p.243
Cynara cardunculus, p.216
Echinops bannaticus 'Taplow Blue', p.241
Eremurus x *isabellinus* 'Cleopatra', p.220
Eryngium pandanifolium
Euphorbia characias subsp. *characias,* p.147
Hedychium 'Tara', p.220
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Ligularia 'Britt Marie Crawford', p.445
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Mathiasella bupleroides 'Green Dream', p.242
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Phormium 'Dazzler', p.216
Rodgersia pinnata 'Fireworks'
Rudbeckia maxima, p.251
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Molinia caerulea subsp. *arundinacea* 'Transparent', p.286
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ABOVE **Architectural beauty**
A tropical effect is created by dramatic *Phoenix canariensis* and the vibrant leaves of *Imperata cylindrica* 'Rubra'.

Plants for quick cover

In gardens with steep banks, large spaces that are impractical to sod or cultivate, or areas that have become neglected, or if there is little time for maintenance, plants that have good ground-covering qualities provide a practical solution. Their rapid, dense, leafy or twiggy growth helps suppress weeds, while creating a decorative blanket of flowers and foliage. Old walls, fences, or screens masking utility areas that also need a quick disguise can be covered with vigorous climbers, such as ivy (*Hedera*). Always select plants that are suitable for the soil conditions.

CONIFERS

Juniperus rigida subsp. *conferta*

SHRUBS

Ceanothus thyrsiflorus var. *repens,* p.159
Cotoneaster conspicuus, p.142
Cotoneaster 'Gnom'
Cotoneaster x *suecicus* 'Skogholm'
Gaultheria shallon, p.154
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Hedera spp. and cvs, p.211
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Anthemis punctata subsp. *cupaniana* p.264
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Chrysosplenium macrophyllum, p.256
Duchesnea indica
Euphorbia amygdaloides var. *robbiae,* p.262
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Geranium macrorrhizum, p.269
Geranium x *oxonianum* 'Claridge Druce'
Glechoma hederacea 'Variegata', p.277
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Portulaca grandiflora series and cvs
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Helianthemum spp. and cvs, pp.336, 338, 340, 344, 345
Persicaria affinis 'Donald Lowndes', p.365
Persicaria vacciniifolia, p.373
Phlox douglasii and cvs, pp.365, 366
Phuopsis stylosa, p.338
Saxifraga stolonifera
Tiarella cordifolia, p.333
Waldsteinia ternata, p.372

TENDER AND EXOTIC PLANTS

Perennials

Heterocentron elegans, p.472

BELOW A tapestry of green shades
The strappy leaves of gardener's garters (*Phalaris arundinacea* var. *picta*) provide excellent groundcover.

Pulmonaria 'Lewis Palmer'

Campanula poscharskyana

Geranium macrorrhizum

Anthemis punctata subsp. *cupaniana*

Alchemilla mollis

Persicaria affinis 'Donald Lowndes'

Groundcover plants for shade

An area that is shaded for some or most of the day may be regarded by some gardeners as a problem space, when in fact it should be viewed as an opportunity to experiment with a different, and often equally exciting, range of plants. The following groundcover plants will provide a wealth of colorful flowers and foliage, and may be planted in even deep shade, provided the soil is reasonably fertile. Where the shade is caused by trees and large shrubs, the soil will also be very dry. Keep new plants well watered during their first year until established.

SHRUBS

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Cotoneaster salicifolius 'Herbstfeuer'
Daphne laureola subsp. *philippi*, p.147
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Euonymus fortunei 'Kewensis'
Gaultheria shallon, p.154
Hypericum calycinum, p.161
Leucothöe fontanesiana
Lonicera ligustrina var. *pileata*, p.167
Mahonia aquifolium, p.148
Mahonia repens
Prunus laurocerasus 'Otto Luyken', p.145
Rubus tricolor
Ruscus hypoglossum, p.167
Sarcococca confusa, p.142
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PERENNIALS

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Ajuga pyramidalis
Ajuga reptans 'Atropurpurea'
Alchemilla mollis, p.275
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Anemone tomentosa
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Brunnera macrophylla 'Jack Frost', p.261
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Convallaria majalis, p.255
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Duchesnea indica
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Epimedium 'Amber Queen', p.263
Epimedium davidii
Epimedium perralderianum
Euphorbia amygdaloides var. *robbiae*, p.262
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Geranium macrorrhizum, p.269
Geranium renardii, p.264
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HEUCHERA, p.282
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Fittonia albivenis Verschaffeltii Group

Astrantia maxima

Geranium sanguineum

Convallaria majalis

Epimedium 'Amber Queen'

RIGHT A covering in shade
Ferns, hostas, and heucheras fill space and offer interesting textures and contrasts in shady corners.

Groundcover plants for sun

Many plants grow naturally in dry, sunny conditions. Some have developed foliage characteristics to minimize moisture loss from their leaves; others are densely branched, keeping the soil surface shaded and cool. Most have extensive root systems that penetrate deeply to find moisture. These plants are adapted to well-drained soils; in poorly drained situations, they may not survive prolonged wet conditions. Although adapted to poorer, dry soils, young plants may have been grown in richer composts and well watered so, when planting, incorporate organic matter, such as leaf mold or coir, and water during dry periods until well established.

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Osteospermum jucundum

Tropaeolum majus Alaska Series

Santolina pinnata subsp. *neapolitana* 'Sulphurea'

RIGHT **Purple and yellow display**
Aurinia saxatilis contrasts with a deep purple *Aubretia* to provide striking groundcovering color in a sunny site.

Plants for dry shade

Dry, shady conditions persist under evergreen trees throughout the year, and although very little moisture penetrates the soil beneath the leaf canopy of deciduous trees, except during prolonged rainfall, a few early-flowering bulbs, such as bluebells (*Hyacinthoides non-scripta*), and woodland plants grow naturally in these sites, dying down as the trees resume growth in spring. In gardens, dry shade occurs under larger, low-branched trees or where eaves extend over borders. Plant in the fall, so that roots are well established by the following spring, feed regularly, and water during dry periods until the plants are established.

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Cotoneaster horizontalis, p.209
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Hedera helix and cvs, p.211
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Cyclamen coum subsp. *coum* f. *coum* Pewter Group 'Maurice Dryden', p.428
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Perennials
Achimenes spp. and cvs, p.469
Clivia miniata, p.476
Nephrolepis exaltata, p.478
Tradescantia zebrina 'Quadricolor'

RIGHT Oceans of blue
English bluebells (*Hyacinthoides non-scripta*) are perfect plants for dry shade, producing a carpet of blue flowers.

Cotoneaster horizontalis

Sarcococca hookeriana var. *digyna*

Geranium phaeum

Plants for moist shade

In areas with high rainfall, the soil in parts of the garden that receive little or no sun may be cool and moist throughout the year. Low-lying gardens with a high water table or drainage problems may also have shady, permanently damp areas. Similar conditions occur along the margins of natural streams, or when an artificial bog is created beside a garden pond. Take advantage of these situations to grow plants such as broad-leaved hostas, ferns, and taller moisture-loving primulas. Plant in spring, enriching lighter soils with well-rotted organic matter. Water during extended dry periods, if necessary.

TREES

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Cyathea medullaris
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Polypodium cambricum 'Richard Kayse', p.293
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Impatiens walleriana and cvs
Limnanthes douglasii, p.321

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Arum italicum subsp. *italicum* 'Marmoratum', p.421
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Alpinia purpurata, p.477
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Curcuma petiolata, p.477
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Streptocarpus spp. and cvs, pp.465, 469, 473
Xanthosoma sagittifolium, p.474
Zingiber mioga

LEFT Fresh, cool greens
Ferns and large-leaved hostas, growing here with blue-flowered *Corydalis*, flourish in cool, moist shade.

Shrubs preferring wall protection

Walls can provide favorable growing conditions for shrubs, especially evergreens, that are only moderately frost hardy. Some winter-flowering shrubs also bloom more reliably and freely when given wall protection. The best wall-side situations are warm and sunny, and provide good shelter from cold winds in winter and early spring. The warmth from heat loss through house walls, and the well-drained conditions near the base of walls, also assist the survival of slightly tender shrubs that do not like damp soil.

SHRUBS

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Acacia pravissima, p.92
Acca sellowiana, p.203
Aloysia triphylla, p.132
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Azara microphylla 'Variegata', p.119
Buddleja asiatica
Cantua buxifolia, p.146
Ceanothus impressus, p.138
Chaenomeles speciosa 'Moerloosei', p.122
Chimonanthus praecox, p.144
Cytisus 'Windlesham Ruby'
Daphne odora 'Aureomarginata', p.164
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Escallonia 'Iveyi', p.112
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Leptospermum scoparium 'Snow Flurry'
Lonicera fragrantissima
Melianthus major, p.145
Myrtus communis, p.122
Olearia x *scilloniensis,* p.131
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Robinia hispida, p.133
Rosa 'Mermaid', p.187
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SALVIAS, p.155
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Azara serrata, p.195
Buddleja crispa, p.204
Callistemon citrinus 'Splendens', p.203
Carpenteria californica, p.197
Coronilla valentina subsp. *glauca,* p.195
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Fabiana imbricata f. *violacea,* p.204
Fremontodendron 'California Glory', p.206
Garrya elliptica
Itea ilicifolia, p.211
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Solanum crispum 'Glasnevin', p.204

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Shrubs

Brunfelsia pauciflora
Iochroma cyaneum, p.457
Tibouchina urvilleana, p.457

Leptospermum scoparium 'Red Damask'

Garrya eliptica

Melianthus major

Abutilon megapotamicum

Plants for paving and wall crevices

In mountainous regions, many alpine plants grow in deep cracks and crevices in the rock. Some are clump-forming or trailing in habit; others, such as saxifrages and sempervivums, grow as rosettes extending by means of runners. If laying paving, leave crevices for small plants, but restrict planting to little-used areas where they can survive. When building stone retaining walls, tilt slabs slightly backward to create deep pockets, and plant them up as the wall is being constructed. Most wall plants thrive in sunny situations, but ramondas and most small ferns prefer moist shade.

ABOVE **Adorning walls with color**
Spreading geraniums, ferns, and small, clump-forming plants can add color and texture to walls and paving.

PERENNIALS

AQUILEGIAS, p.226
Geum 'Bell Bank', p.268
Ourisia coccinea, p.269

Grasses and bamboos

Carex flagellifera, p.289
Imperata cylindrica 'Rubra', p.285
Stipa tenuissima, p.288

Ferns

Asplenium ceterach, p.293
Polypodium cambricum 'Richard Kayse', p.293

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Ageratum houstonianum
Limnanthes douglasii, p.321
Lobelia erinus cvs, pp.311, 314
Lobularia maritima
Malcolmia maritima, p.304
Nemophila maculata, p.299
Nemophila menziesii, p.314
Portulaca grandiflora series and cvs

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Acaena microphylla, p.374
Acantholimon glumaceum, p.363
Aethionema 'Warley Rose', p.362
Androsace sarmentosa
Antennaria dioica
Armeria maritima 'Vindictive', p.365
Artemisia schmidtiana 'Nana', p.374
Aubrieta spp. and cvs, pp.353, 354, 355
Aurinia saxatilis and cvs, p.335
Campanula cochleariifolia, p.369
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Dianthus deltoides 'Leuchtfunk', p.365
Draba aizoides
Dryas octopetala, p.361
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Phlox douglasii 'Crackerjack', p.365
Physoplexis comosa (wall only), p.366
Ramonda myconi (wall only), p.369
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Sedum spathulifolium 'Cape Blanco', p.375
Thymus 'Bressingham', p.365
Thymus caespititus, p.366
Umbilicus oppositifolius, p.335
Vitaliana primuliflora, p.358

Plants for containers

Containers packed with foliage and flowers can brighten patios, decks, and balconies. Large containers are best in sunny, sheltered sites, as they retain more moisture than small ones. Small trees, conifers, or shrubs, together with perennials, give long-term interest with their foliage and forms, and periods of flowering. For colorful displays, plant spring-flowering bulbs, followed by summer bedding, which will flower from late spring to the first frosts.

TREES

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Crataegus laevigata and cvs, p.84
Eucalyptus (when young), pp.67, 68, 78, 79
HOLLIES, p.94
Laurus nobilis, p.80
Malus 'Laura'
Malus 'Sun Rival'
Melia azedarach, p.71
Olea europaea

Conifers

DWARF CONIFERS, p.105

SHRUBS

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Choisya ternata, p.122
HARDY FUCHSIAS, p.154
Hebe cupressoides and cvs, pp.165, 347
HYDRANGEAS, pp.134–135
LAVENDERS, p.158
Myrtus communis, p.122
Pittosporum tenuifolium 'Tom Thumb', p.164
RHODODENDRONS (most), pp.124–125
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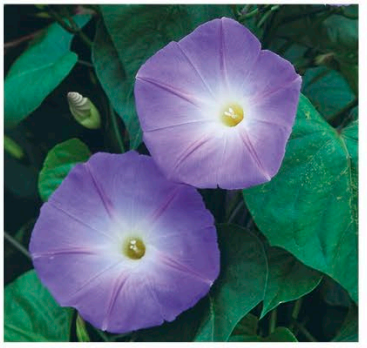
BELOW Springtime tulips
Terra-cotta containers planted in late fall with single and double tulip bulbs make a colorful, elegant display the following spring.



Ipomoea tricolor 'Heavenly Blue'

Phormium 'Dazzler'

Saxifraga stolonifera 'Tricolor'

Pelargonium 'Bullseye Salmon'

Viola x *wittrockiana* Joker Series

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Dianthus gratianopolitanus p.363
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Hypericum olympicum
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Saponaria ocymoides, p.364
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Centropogon ferrugineus

Cacti and succulents
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Trailing plants for walls or baskets

Many plants grow naturally in crevices, their trailing stems covering large areas of vertical rock. In gardens, they can be used at the top of retaining walls to soften the brickwork. Smaller trailing plants, including tender perennials and annuals, are ideal for hanging baskets. After planting, hang baskets on sturdy brackets on a wall or set them on large, inverted pots on a patio or an old tree stump so that the plants form a conical mound of tumbling stems and flowers.

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Nemophila maculata, p.299
Nolana paradoxa
Pelargonium peltatum
x *Petchoa* Supercal Series, p.303
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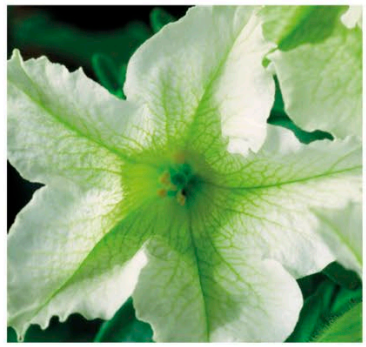
Perennials
Achimenes 'Peach Blossom'
Aeschynanthus speciosus, p.478
Centropogon ferrugineus

Glandularia 'Sissinghurst'

Helichrysum petiolare



Petunia SURFINIA LIME ('Keiyeul')

Plants with aromatic foliage

The leaves of many plants contain essential aromatic oils, used in medicine or cooking. For gardeners, their value lies in the aromas released naturally or when bruised. Those of culinary value, such as rosemary, are ideal for herb gardens, or plant low-growing thymes next to paths or between paving stones, where they will emit their scent when stepped on. The fragrance from trees is best appreciated as it drifts through the garden on the wind.

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Populus balsamifera
Populus trichocarpa
Sassafras albidum, p.64
Umbellularia californica, p.69

BELOW Scented seating
Create a relaxing resting place in the garden with a stylish wooden bench surrounded by aromatic herbs, such as lavender, thyme, and marjoram.

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Shrubs

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Prostanthera ovalifolia, p.457

Perennials

Kaempferia pulchra, p.477

Phlomis fruticosa

Rosa rubiginosa

Nepeta 'Six Hills Giant'

Plants with fragrant flowers

Fragrance is a compelling feature of many plants. It can be strong, filling the garden with scent, or apparent only when you are close to individual blooms. Some plants release scent continuously, while the perfume of others is more noticeable at night. A sunny, sheltered patio is an ideal situation for fragrant plants, or site them close to paths, and train fragrant climbers over arches and around doorways. Hyacinths provide early spring fragrance indoors.

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Berberis x *stenophylla*, p.127
Brugmansia arborea
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ROSES (many)
Trachelospermum spp., pp.195, 196
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Argemone mexicana, p.321
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Erysimum cheiri series and cvs, pp.308, 336
Exacum affine
Glandularia x *hybrida* series
Heliotropium arborescens, p.310
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Nemesia AMELIE ('Fleurame'), p.301
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Crinum x *powellii*, p.385
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Boronia megastigma, p.456
Gardenia jasminoides 'Veitchiana', p.454

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Cattleya J.A.Carbone gx

Lilium regale

Lonicera etrusca 'Michael Rosse'

Wisteria sinensis 'Prolific'

Anemone sylvestris

RIGHT Classic combination
Rosa 'Felicia' and *Lavandula angustifolia* provide pretty contrasts and a heady fragrance in a summer border.

Decorative fruit or seed heads

As winter approaches, dull corners or featureless borders can be brightened with the colorful fruits of berberis, cotoneasters, viburnums, and other ornamental berried shrubs. On pergolas and trellises, *Celastrus orbiculatus* and *Clematis orientalis* provide late-season interest with trailing skeins of yellow fruits and feathery seeds. Wall-trained pyracanthas will color drab winter walls with yellow, orange, or scarlet fruits, while hollies (*Ilex*) also sport berries for winter decoration. The dried seedheads of many plants produce beautiful effects for indoor and outdoor displays.

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Aconitum 'Stainless Steel', p.241
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Molinia caerulea subsp. *caerulea* 'Variegata'
Panicum virgatum 'Shenandoah'
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TENDER AND EXOTIC PLANTS

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BELOW Late-season sculpture
The seedheads of *Allium cristophii* complement the brown seed pods of *Nigella damascena*, adding texture to an herbaceous border as winter approaches.

Iris foetidissima

Rosa roxburghii

Symphoricarpus albus var. *laevigatus*

Ilex aquifolium 'Pyramidalis Aureomarginata'

Flowers for cutting

With careful selection, flowers can be cut from the garden at most times of the year, from the Christmas rose (*Helleborus niger*) in midwinter to *Nerine bowdenii* in fall. In small gardens, integrate plants for cutting into the general scheme, and leave some blooms for display, or plant away from the house so that the cutting is less noticeable. Feed regularly during the growing season, to counteract the weakening effects of cutting the plants.

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BULBS, CORMS, AND TUBERS

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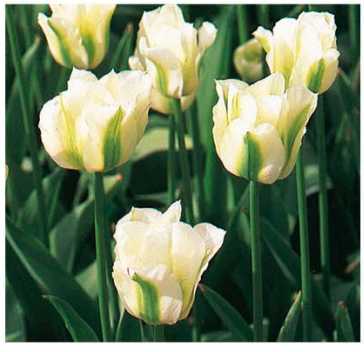
RIGHT Late summer beauty
A selection of dahlias in shades of pink planted with vibrant blue agapanthus fill the late summer border and make excellent cut flowers.

Narcissus 'Tahiti'

Allium aflatunense

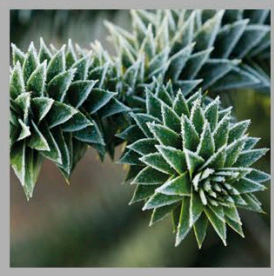
Rosa 'Just Joey'



Tulipa 'Spring Green'

Chrysanthemum 'Chelsea Physic Garden'

Anchusa azurea 'Loddon Royalist'



TREES

Trees are the most permanent elements in any planting scheme, making a strong visual impact by virtue of their size alone. There is a wealth of ornamental trees to choose from, with a range to suit your climate and growing conditions, as well as the size and style of your garden. Both deciduous and evergreen trees provide year-round structure and beauty, but they have many other benefits too, providing shade in summer, shelter in winter, and nesting sites and food for birds, insects, and other wildlife. Trees can also help reduce pollution and combat climate change by absorbing carbon dioxide from the atmosphere and replacing it with oxygen. They can even help regulate groundwater, an important benefit in areas at risk of flooding and soil erosion.

TREES

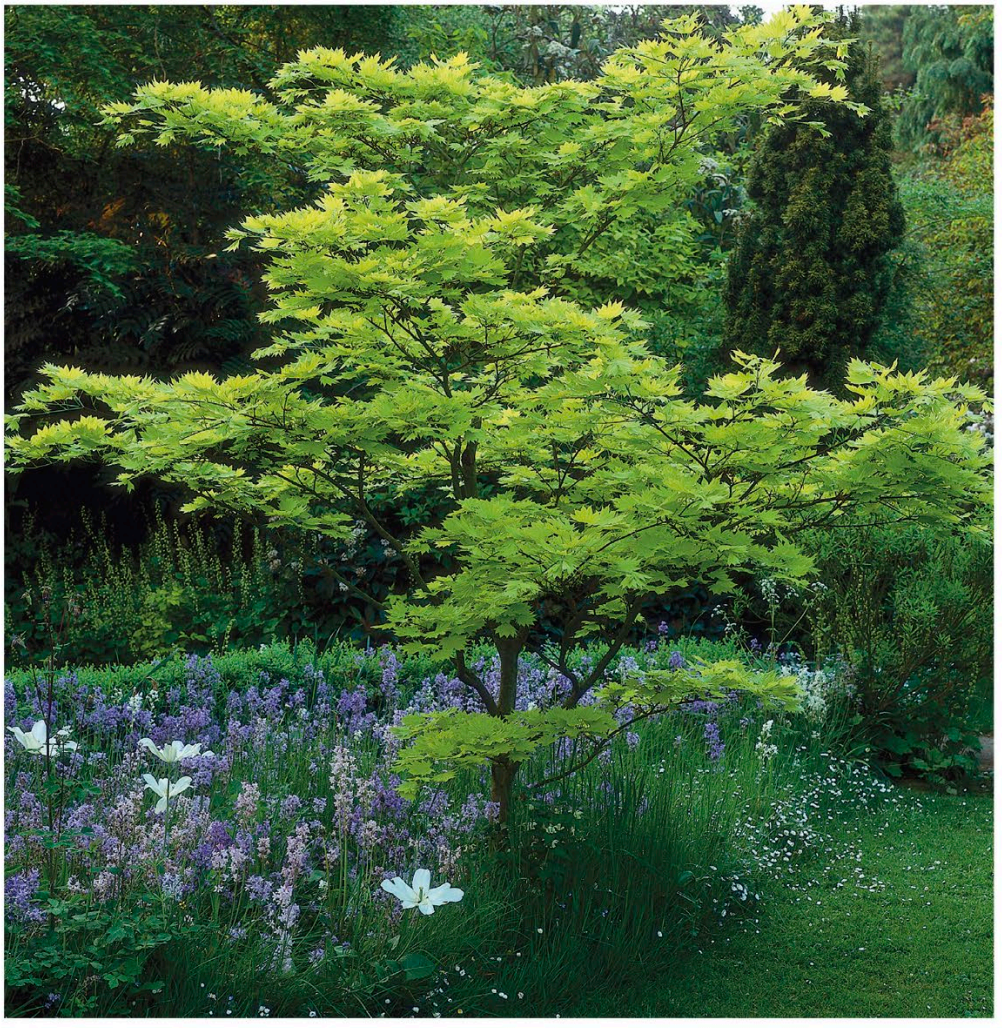
Dramatic and sculptural, trees are essential plants for gardens large and small. In design terms, they provide height, structure and year-round interest, with flowers, foliage, fruit, and attractive bark, while also offering a home and source of food for birds and other wildlife.

SIZE CATEGORIES USED WITHIN THIS GROUP		
Large over 50ft (15m)	Medium 30–50ft (10–15m)	Small up to 30ft (10m)

What are trees?

Trees are woody plants, with life spans ranging from decades to several centuries. There are deciduous and evergreen trees, and most have a single stem with a crown of branches, although some produce multiple stems, either naturally or as a result of pruning. They range in size from conifers that are less than 3ft (1m) in height, to forest giants that soar up to 300ft (90m) or more. Trees also vary in shape. Some are narrowly conical or columnar, others are rounded or spreading, while some have an elegant, arching, weeping habit. There is also a wide choice of leaf shape and color.

BELOW Letting in the light
Deciduous trees, such as *Acer shirasawanum* 'Aureum', can be used to make a wonderful garden centerpiece, underplanted with low plants to extend the interest before and after the main summer season.



Choosing trees

Before buying, match the needs of your chosen tree with the conditions in your garden. A tree is a long-term investment, so consider your site and soil carefully to ensure it will thrive, and that the size, shape, and style will suit your design scheme, since trees are difficult to move once established. Also calculate the amount of shade the tree will cast on your or your neighbor's garden when mature, and site large trees away from the house, and where their roots will not interfere with walls, pipes, drains or cables.

Designing with trees

Trees have many beautiful features and can be used in various ways to enhance a garden design. For example, several trees can be planted to form enclosures or define spaces; they can be used in pairs to frame a view, or in rows to form an avenue or tunnel. A line of trees also provides excellent wind protection, and those that tolerate clipping, such as beech (*Fagus sylvatica*), hornbeam (*Carpinus betulus*), and yew (*Taxus baccata*), make attractive hedges that diffuse wind and noise.

Many trees have eye-catching features that make beautiful focal points—those with colorful stems and bark or large sculptural leaves make good choices. The shape and form of a tree can also help

REMOVING A TREE BRANCH

The best time to prune most trees is in late winter when the plants are dormant, but wait until mid- to late summer for hornbeam (*Carpinus*), pears (*Pyrus*), and plums and cherries (*Prunus*), which are susceptible to disease if cut earlier.

1 Make an undercut first
Shorten the branch first to reduce its weight and stop it from falling and tearing the bark. Cut halfway through the underside of the branch, then saw downward from the top, farther along the branch away from the trunk. Allow the branch to snap off.

2 Cut close to the trunk
Remove the final stump by cutting close to the trunk, but not flush with it. Make a smooth cut, angled away from the tree, just beyond the crease in the bark where the branch meets the trunk.

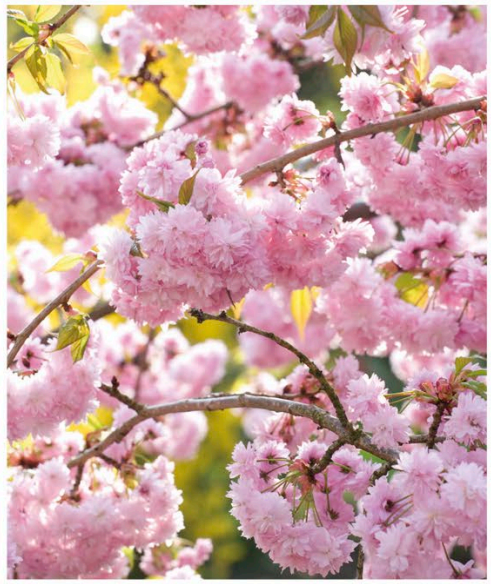
create a style. For example, the crisp outline of *Juniperus communis* 'Compressa' suits a formal design, while the shape, flowers, and fruit of many crabapples (*Malus* species) lend natural informality.

If you have space for several trees, you can create a small woodland, underplanted with shade-loving perennials. Many small trees, such as *Acer palmatum* and the corkscrew hazel (*Corylus avellana* 'Contorta'), and dwarf conifers are also suitable for growing in containers, and will add height and interest to patios, decks, and roof gardens.

Year-round interest

Broadleaf evergreens, such as hollies (*Ilex*) and bay laurel (*Laurus nobilis*), provide a valuable green backdrop throughout the year, while the needlelike foliage and candlelike cones of conifers offer a useful contrast in shape and texture. Against this permanent display, plant deciduous trees for a seasonally changing palette of leaf colors, flowers, and fruit. Japanese cherries (*Prunus*), crabapples (*Malus*) and magnolias have vivid spring flowers, while many trees have large, dramatic leaves or colorful foliage that brightens up the summer garden. A few trees, such as *Maackia amurensis* and *Arbutus unedo,* bear flowers in late summer and fall, but in the case of Japanese maples (*Acer*), the Chinese tupelo (*Nyssa sinensis*), and liquidambars, fall foliage color is the main attraction; they produce luminous colors that set the garden ablaze.

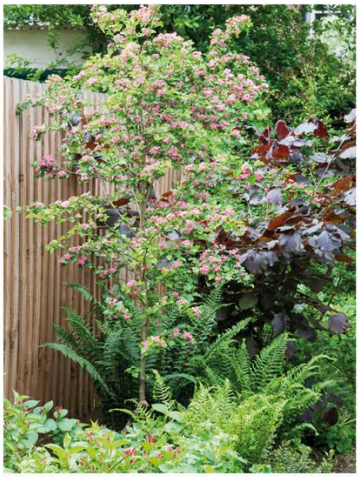
Stem and bark color is a key feature of winter displays. The bleached white trunks of birches (*Betula*), glossy copper stems of *Prunus serrula,* and shaggy bark of *Acer griseum* provide focal points, while the dainty pink flowers of *Prunus* x *subhirtella* 'Autumnalis' lift late-winter days.



ABOVE Spring benefits
The profusion of large, double pink flowers of *Prunus serrulata* 'Kiku-shidare-sakura' makes a dramatic and colorful focal point in a spring garden.

PLANTING A CONTAINER-GROWN TREE

It is worth taking the time to prepare the site and plant your tree well, as this will increase its chances of survival, and ensure that it thrives. Trees that have been grown in containers can be planted at most times of the year, but the warm, damp soil in fall provides ideal conditions. Bare-root trees are cheaper and available in fall or late winter. Plant them as soon as you get them home, unless the soil is frozen.



1 Break up the soil

Dig a hole twice the width of the pot and the same depth as the tree's rootball. Do not dig over the bottom of the hole as this may cause the tree to sink once planted. Instead, use a fork to puncture the base and sides.

2 Check planting depth

Remove the tree from its pot and put it in the hole. Use a cane to check that the top of the rootball is at the same level or slightly above the soil. Lift out the plant and cut away any roots that are circling the root ball.

3 Firm in

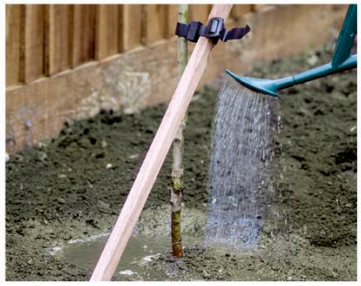
Tease out the roots, lower the tree back into the hole, and water it well. Then water again as you backfill the hole to ensure that there are no air pockets and the roots are in no danger of drying out. Firm the tree in gently.

4 Stake the tree

To prevent the tree from rocking in the wind, which can damage the roots, drive in a wooden tree stake with a mallet at an angle of 45 degrees. Make sure the stake does not damage the root ball.

5 Attach the tree ties

Ensure that the top of the stake faces into the prevailing wind. Place a tree tie with a spacer one-third of the way up the trunk from the base. Drive a nail through the tree tie into the stake to stop it from slipping down.



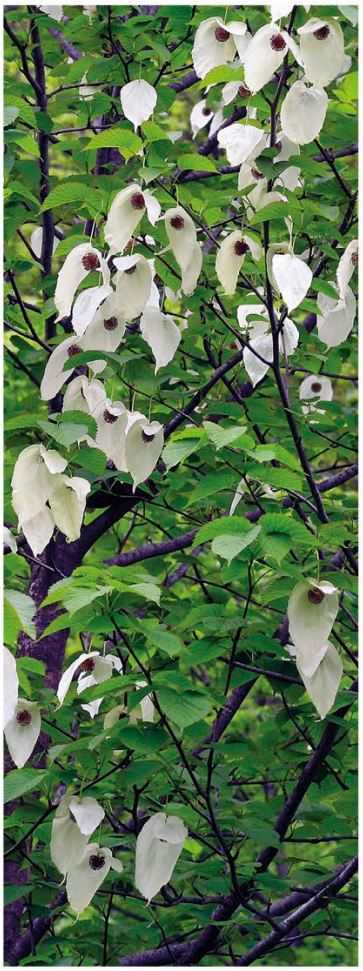
6 Continue to water in well

Water the tree well and apply a moisture-conserving bark mulch over the area around the tree, leaving a space clear around the stem to prevent the mulch from rotting it. Water the tree during dry spells for 2 years.

BARE-ROOT TREES

If the ground is frozen when you receive your bare-root trees, or you are unable to plant them immediately for some other reason, fill a large pot with potting mix and heel them in. This simply means burying the roots to keep them moist. Plant the trees in the same way as shown here for container-grown plants, but take care to leave no air pockets when filling in around the roots with soil.

WHITE



Davidia involucrata
(Dove tree, handkerchief tree)
Deciduous, conical tree with heart-shaped, vivid green leaves, felted beneath. Large, white bracts appear on mature trees from late spring.

☼ ◖ Z6–8

100ft 30m
75ft 22.5m
0

Populus* x *canescens (Gray poplar)
Vigorous, deciduous, spreading tree with slightly lobed leaves, gray when young, glossy, dark green in summer, and yellow in fall. Usually bears grayish-red catkins in spring.

☼ ◖ Z4–9

100ft 30m
75ft 22.5m
0

RED

***Acer platanoides* 'Crimson King'**
Vigorous, deciduous, spreading tree. Leaves are large, lobed, and deep reddish-purple, turning orange in fall. Tiny, red-tinged, deep yellow flowers are carried in midspring.

☼ ◊ Z3–7

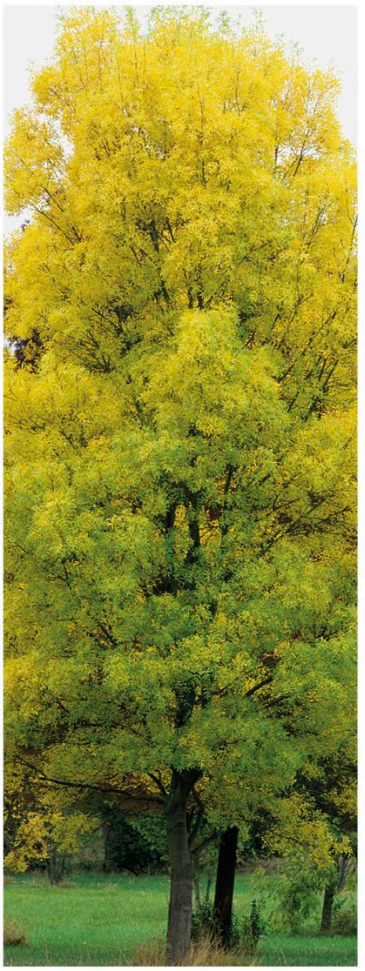
100ft 30m
75ft 22.5m
0

***Aesculus* x *carnea* 'Briotii'**
Deciduous, round-headed tree. Leaves, consisting of 5 or 7 leaflets, are glossy, dark green. Panicles of red flowers are borne in late spring.

☼ ◊ Z7–8 ⓘ

100ft 30m
75ft 22.5m
0

YELLOW



***Fraxinus excelsior* 'Jaspidea'**
Vigorous, deciduous, spreading tree grown for its golden-yellow twigs and black buds, which are most evident in winter. Yellow leaves, with 9–11 ovate leaflets, fade to light green and then gold, in fall.

☼ ◊ Z5–8

100ft 30m
75ft 22.5m
0

Acer macrophyllum (Oregon maple)
Deciduous, round-headed tree with large, deeply lobed, dark green leaves that turn yellow and orange in fall. Yellowish-green flowers in spring are followed by pale green fruits.

☼ ◊ Z3–8

100ft 30m
75ft 22.5m
0

WHITE

Aesculus chinensis
(Chinese horse-chestnut)
Slow-growing, deciduous, spreading tree. Leaves are glossy, dark green with 7 leaflets. Slender spires of white flowers are produced in midsummer.

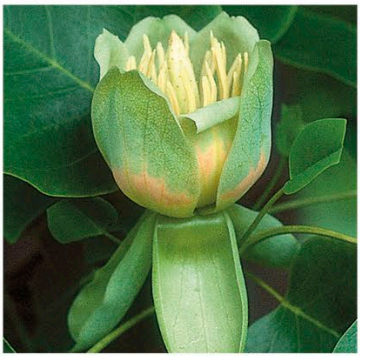
☼ ◊ Z6–8 ⓘ

100ft 30m
75ft 22.5m
0

Populus alba
(White poplar)
Deciduous, spreading tree with wavy-margined or lobed leaves, dark green above, white beneath, turning yellow in fall.

☼ ◖ Z4–9

100ft 30m
75ft 22.5m
0

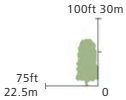


Liriodendron tulipifera (Tulip tree)
Vigorous, deciduous, spreading tree. Deep green leaves, with a cut-off or notched tip and lobed sides, turn yellow in fall. In midsummer, has tulip-shaped, orange-marked, greenish-white flowers.

☼ ◊ pH Z4–9

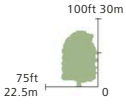
100ft 30m
75ft 22.5m
0

Populus maximowiczii
Fast-growing, deciduous, conical tree. Ovate, heart-shaped, bright green leaves have green-veined, white undersides and turn yellow in fall. Bears long, pendent seedheads surrounded by silky, white hairs in late summer.

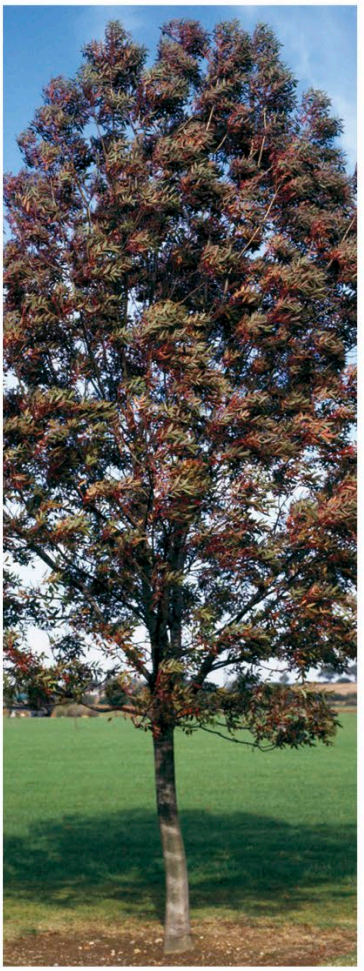


☼ 💧 Z4–7

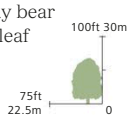
***Castanea sativa* 'Albomarginata'**
Deciduous, spreading tree. Has glossy, white-edged, dark green leaves that turn yellow in fall. Spikes of creamy-yellow flowers in summer are followed by edible fruits in fall.



☼ 💧 Z5–7

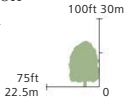


***Fagus sylvatica* 'Rohanii'**
Slow-growing, deciduous tree with ovate, deeply cut, deep red-purple leaves, sometimes tinged with green or brown. Leaf margins are deeply cut into triangular teeth, which may bear serrations. Leaf veins and leaf stalk are prominently red.



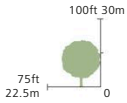
☼ 💧 Z4–7

***Fagus sylvatica* 'Riversii'**
Fast-growing, deciduous, spreading tree with smooth, gray bark and elliptic, wavy-margined, dark purple leaves, which are larger than those of the species. New leaves on young shoots are wine-red and translucent.



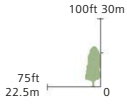
☼ 💧 Z4–7

Quercus macranthera
(Caucasian oak)
Deciduous, spreading, sturdy-branched, handsome tree with large, deeply lobed, dark green leaves.



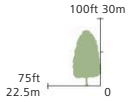
☼ 💧 Z6–8

Alnus incana (Gray alder)
Deciduous, conical tree useful for cold, wet areas and poor soils. Yellow-brown catkins are carried in late winter and early spring, followed by ovate, dark green leaves.



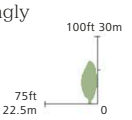
☼ 💧 Z2–6

***Populus* x *canadensis* 'Robusta'**
Fast-growing, deciduous, conical tree with upright branches. Broadly ovate, bronze, young leaves mature to glossy, dark green. Bears long, red catkins in spring.



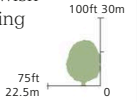
Z4–9

***Quercus robur* Fastigiata Group**
Deciduous, upright, narrow, columnar tree of dense habit with fissured, gray-brown bark. Produces short-stalked, lobed, dark green leaves, and ovoid acorns borne singly or in clusters.



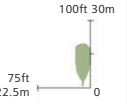
Z5–8

Quercus canariensis (Algerian oak, Mirbeck's oak)
Deciduous or semievergreen tree, narrow when young, broadening with age. Large, shallowly lobed, rich green leaves become yellowish-brown in fall, often persisting into late winter.



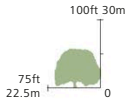
Z7–9

Acer cappadocicum* subsp. *lobelii
(Lobel's maple)
Deciduous tree of narrow, upright habit, well-suited for growing in restricted space. Has wavy-edged, lobed leaves that turn yellow in fall.



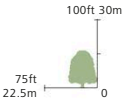
Z6–8

***Fagus sylvatica* 'Pendula'**
(Weeping beech)
Deciduous, weeping tree with ovate, wavy-edged, mid-green leaves that in fall take on rich hues of yellow and orange-brown.

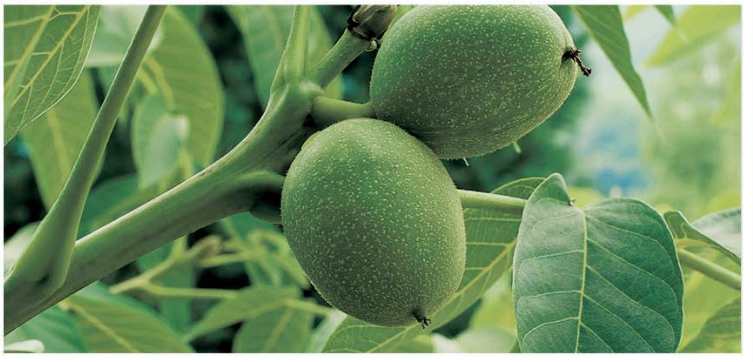


Z4–7

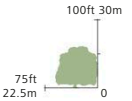
Celtis australis (European hackberry)
Deciduous, spreading tree. Has ovate, pointed, sharply toothed, dark green leaves and small, purple-black fruits.



Z6–8



Juglans regia (English walnut)
Deciduous tree with a spreading head. Leaves, usually with 5 or 7 leaflets, are aromatic, bronze-purple when young, glossy, mid-green when mature. Produces edible nuts.



Z3–7

***Populus nigra* 'Italica'**
(Lombardy poplar)
Very fast-growing, deciduous, narrowly columnar tree with erect branches, diamond-shaped, bright green leaves, and red catkins in midspring.

☼ 💧 Z3–9

Platanus* x *hispanica (London plane)
Vigorous, deciduous, spreading tree with ornamental, flaking bark. Has large, sharply lobed, bright green leaves. Spherical fruit clusters hang from shoots in fall.

☼ 💧 Z5–8 ⓘ

Ailanthus altissima (Tree of heaven)
Fast-growing, deciduous, spreading tree with clusters of small, green flowers in midsummer, followed by winged, green, then reddish-brown fruits. Large, dark green leaves have paired, ovate leaflets.

☼ 💧 Z4–8

Tilia oliveri
Deciduous, spreading, open tree with pointed, heart-shaped leaves, bright green above and silvery-white beneath. Produces small, fragrant, greenish-yellow flowers in summer, followed by winged fruits.

☼ 💧 Z6–8

***Quercus petraea* 'Columna'**
Deciduous, upright, slender tree with large, wavy-edged, leathery, dark green leaves, tinged bronze when young.

☼ 💧 Z5–8

Juglans nigra (Black walnut)
Fast-growing, deciduous, handsome, spreading tree with large, aromatic leaves of many pointed, glossy, dark green leaflets. Produces edible nuts in fall.

☼ 💧 Z5–9

***Tilia platyphyllos* 'Rubra'**
(Bigleaf linden)
Deciduous, spreading tree with red winter shoots and rounded, dark green leaves. Bears small, dull yellowish-white flowers in midsummer.

☼ 💧 Z5–8

Platanus orientalis (Oriental plane)
Vigorous, deciduous, spreading tree with flaking, gray, brown or cream bark and large, glossy, pale green leaves with 5 deep lobes. Green fruit clusters, later turning brown, persist in fall–winter.

☼ 💧 Z3–8

Nothofagus obliqua (Roblé, southern beech)
Fast-growing, deciduous, elegant tree with slender, arching branches. Has deep green leaves that turn orange and red in fall.

☼ 💧 Z8–9

Quercus nigra (Water oak)
Deciduous, spreading tree with glossy, bright green foliage retained until well into winter.

☼ 💧 Z7–9

Sassafras albidum
Deciduous, upright, later spreading tree. Aromatic, glossy, dark green leaves vary from ovate to deeply lobed and turn yellow or red in fall. Has insignificant, yellowish-green flowers in spring.

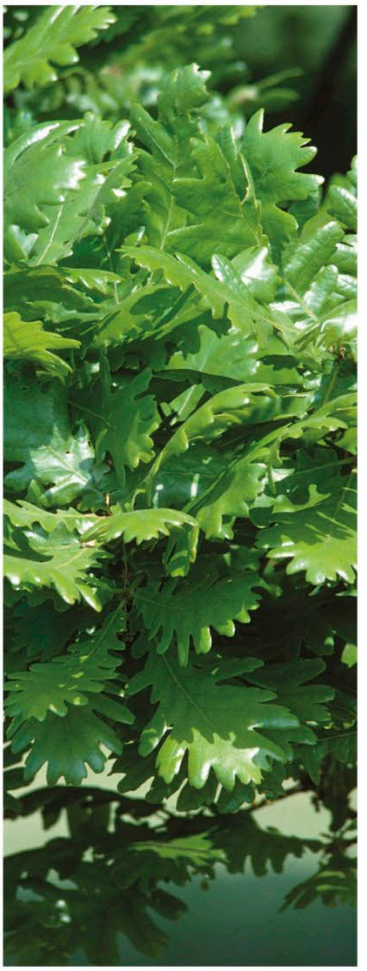
***Fagus sylvatica* var. *heterophylla* 'Aspleniifolia'** (Fernleaf beech)
Fast-growing, deciduous, spreading tree. Has narrow, deeply cut, deep green leaves, which give a soft, feathery outline to the tree. In fall, leaves turn golden-brown and persist well into winter.

***Tilia tomentosa* 'Petiolaris'** (Weeping silver linden)
Deciduous, spreading tree with pendent branches. Pointed, heart-shaped leaves, dark green above, silver beneath, shimmer in the breeze. Has fragrant, creamy-yellow flowers in late summer.

Quercus castaneifolia
(Chestnut-leaf oak)
Deciduous, spreading tree with sweet-chestnut-like, sharply toothed leaves, glossy, dark green above, gray beneath. Produces ovoid acorns, in long-scaled cups, in fall.

Zelkova carpinifolia (Caucasian elm)
Deciduous tree with a short, sturdy trunk from which many upright branches arise to make an ovate, dense crown. Produces ovate, sharply toothed, dark green leaves, turning orange-brown in fall.

Fagus sylvatica (Common beech)
Deciduous, spreading tree with ovate, wavy-edged leaves. These are pale green when young, mid- to dark green when mature, and turn rich yellow and orange-brown in fall, when nuts are produced.

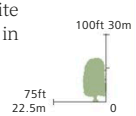


Quercus frainetto (Hungarian oak)
Fast-growing, deciduous, spreading tree with a large, domed head and handsome, large, deeply lobed, dark green leaves.

Nothofagus alpina
(Rauli, southern beech)
Fast-growing, deciduous, conical tree. Leaves, with many impressed veins, are dark green, turning orange and red in fall.

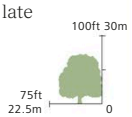
YELLOW

***Liriodendron tulipifera* 'Aureomarginatum'**
Vigorous, deciduous tree. Deep green leaves have yellow margins, cut-off or notched tips and lobed sides. Bears cup-shaped, greenish-white flowers, splashed orange, in summer on mature trees.



☼ 💧 pH Z4–9

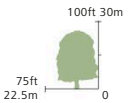
Pterocarya* x *rehderiana
Very fast-growing, deciduous, spreading tree. Has glossy, bright green leaves consisting of narrow, paired leaflets that turn yellow in fall and long catkins of winged fruits in late summer and fall.



☼ 💧 Z6–9

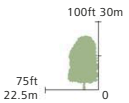
RED

Quercus rubra (Red oak)
Fast-growing, deciduous, spreading tree. Attractively lobed leaves, often large, are deep green, becoming reddish- or yellowish-brown in fall.



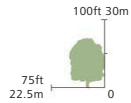
☼ 💧 Z5–9

Liquidambar styraciflua (Sweetgum)
Deciduous, conical to spreading tree. Shoots develop corky ridges. Lobed, glossy, dark green leaves turn brilliant orange, red, and purple in fall.



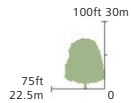
☼ 💧 Z7–9

Acer pseudoplatanus* f. *erythrocarpum
Vigorous, deciduous, spreading tree with lobed, deep green leaves. Wings of young fall fruits are bright red.



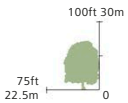
☼ 💧 Z4–7

Quercus ellipsoidalis
Deciduous, spreading tree with deeply lobed, glossy, dark green leaves that turn dark purplish-red, then red in fall.



☼ 💧 Z4–7

Quercus coccinea (Scarlet oak)
Deciduous, round-headed tree. Glossy, dark green leaves have deeply cut lobes ending in slender teeth. In fall, they turn bright red, usually persisting for several weeks on the tree.



☼ 💧 Z5–9

Acer rubrum (Red maple)
Deciduous, round-headed tree. Dark green leaves turn bright red in fall, producing best color on acidic or neutral soil. In spring, bare branches are covered with tiny, red flowers.

☼ 💧Z3–9

***Acer rubrum* 'Scanlon'**
Deciduous, upright tree. Has lobed, dark green foliage that in fall becomes bright red, particularly on acidic or neutral soil. Clusters of small, red flowers decorate bare branches in spring.

☼ 💧Z3–9

Nyssa sylvatica (Black gum, tupelo)
Deciduous, broadly conical tree with ovate, glossy, dark to mid-green leaves that turn brilliant yellow, orange, and red in fall.

☼ 💧Z5–9

***Acer rubrum* 'Schlesingeri'**
Deciduous, round-headed tree. In early fall, dark green leaves turn deep red. Tiny, red flowers appear on bare wood in spring.

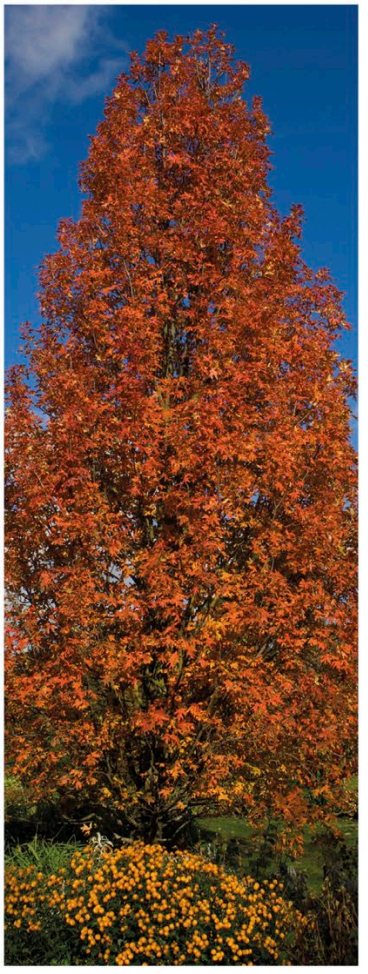
☼ 💧Z3–9

***Fraxinus angustifolia* subsp. *oxycarpa* 'Raywood'** (Claret ash)
Vigorous, deciduous, spreading tree. Leaves have 5–7 narrowly ovate, glossy, dark green leaflets that mature to bright reddish-purple in fall.

☼ 💧Z6–9

Quercus alba (White oak)
Deciduous, spreading tree. Deeply lobed, glossy, dark green leaves turn reddish-purple in fall.

☼ 💧Z5–9

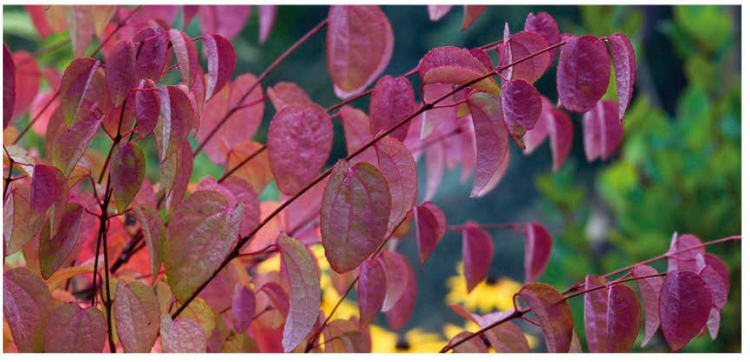


Quercus palustris (Pin oak)
Fast-growing, deciduous, spreading tree with slender branches, pendulous at the tips. Deeply lobed, glossy, bright green leaves turn scarlet or red-brown in fall.

☼ 💧Z5–8

Prunus serotina (Black cherry)
Deciduous, spreading tree. Spikes of fragrant, white flowers appear in early summer, followed by red fruits that turn black in fall. Glossy, dark green leaves become yellow in fall.

☼ 💧Z4–8 ⓘ



Cercidiphyllum japonicum (Katsura tree)
Fast-growing, deciduous, spreading tree. Leaves, bronze when young, turn rich green, then yellow to purple in fall, especially on acidic soil. Fallen leaves smell of burnt toffee.

☼ 💧Z4–8

YELLOW

***Acer platanoides* 'Palmatifidum'**
Vigorous, deciduous, spreading tree. Deeply divided, pale green leaves with slender lobes turn yellow or reddish-orange in fall. Tiny, yellow flowers appear in midspring.

Quercus phellos (Willow oak)
Deciduous, spreading tree of elegant habit. Narrow, willowlike, pale green leaves turn yellow then brown in fall.

Carya ovata (Shagbark hickory)
Deciduous tree with flaking, gray bark. Has dark green leaves, usually consisting of 5 slender leaflets, that turn golden-yellow in fall.

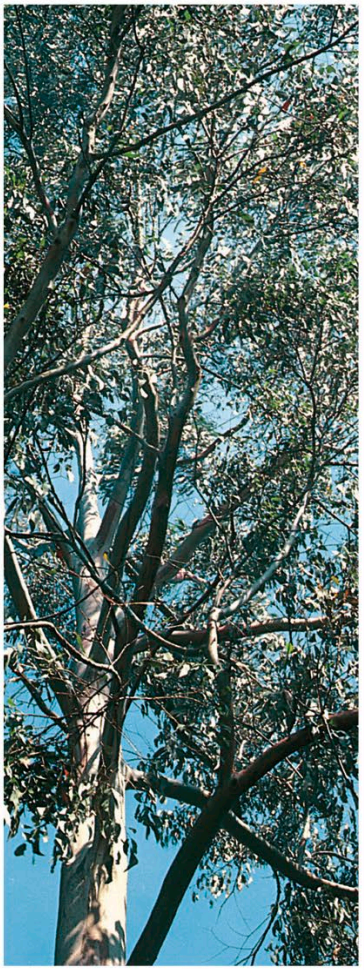
Zelkova serrata
Deciduous, spreading tree with sharply toothed, finely pointed, dark green leaves that turn yellow or orange in fall.

Gymnocladus dioica
(Kentucky coffeetree)
Slow-growing, deciduous, spreading tree with small, star-shaped, white flowers borne in early summer. Large leaves, with pairs of ovate leaflets, are pink when young, green in summer, then yellow in fall.

Prunus avium (Mazzard, sweet cherry)
Deciduous, spreading tree with red-banded bark. Has sprays of white flowers in spring, deep red fruits, and dark green leaves that turn red and yellow in fall.

WHITE

Betula papyrifera (Canoe birch, paper birch)
Vigorous, deciduous, open-branched, round-headed tree with peeling, shiny, white bark, yellowish catkins in spring, and ovate, coarsely serrated leaves that turn clear yellow in fall.



Eucalyptus dalrympleana
(Mountain gum)
Vigorous, evergreen tree. Creamy-white, young bark becomes pinkish-gray, then peels. Leaves are long, narrow and pendent. Clusters of white flowers appear in late summer and fall.

WHITE

***Betula pendula* 'Tristis'**
(Weeping birch)
Deciduous, slender, elegant tree with a strongly weeping habit and white bark. Ovate, bright green leaves, with toothed margins, provide excellent golden color in fall.

100ft 30m
75ft 22.5m
0

☼ 💧 Z2–7

Eucalyptus coccifera (Tasmanian snow gum, Mount Wellington peppermint)
Evergreen tree with peeling, blue-gray and white bark and aromatic, pointed, gray-green leaves. Bears clusters of white flowers, with numerous stamens, in summer.

100ft 30m
75ft 22.5m
0

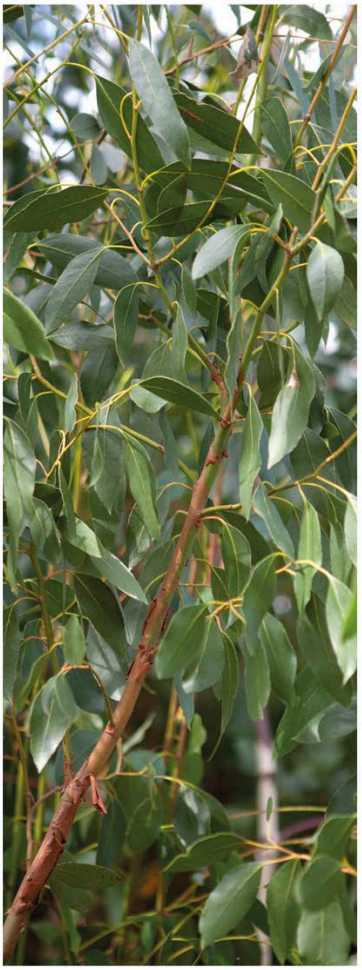
☼ 💧 Z9–11

GREEN

Eucalyptus gunnii (Cider gum)
Evergreen, conical tree with peeling, cream, pinkish, and brown bark. Leaves are silver-blue when young, blue-green when mature. Clusters of white flowers, with numerous stamens, appear in midsummer.

100ft 30m
75ft 22.5m
0

☼ 💧 Z8–10



Eucalyptus johnstonii
(Tasmanian yellow gum)
Fast-growing, evergreen tree with red to blue-green, peeling bark. Round, fresh green young leaves turn spear-shaped, glossy, dark green when mature. Small, urn-shaped seed capsules follow clusters of white flowers.

100ft 30m
75ft 22.5m
0

☼ 💧 Z9–10

Quercus* x *turneri
Semievergreen, rounded, dense tree. Lobed, leathery, dark green leaves fall just before new foliage appears in spring.

100ft 30m
75ft 22.5m
0

☼ 💧 Z6–9

Nothofagus dombeyi
Evergreen, loosely conical tree of elegant habit with shoots that droop at the tips. Leaves are sharply toothed, glossy, dark green.

100ft 30m
75ft 22.5m
0

☼ 💧 Z8–9

***Quercus* x *crenata* 'Lucombeana'**
(Lucombe oak)
Semievergreen, spreading tree with toothed leaves, glossy, dark green above, gray beneath.

100ft 30m
75ft 22.5m
0

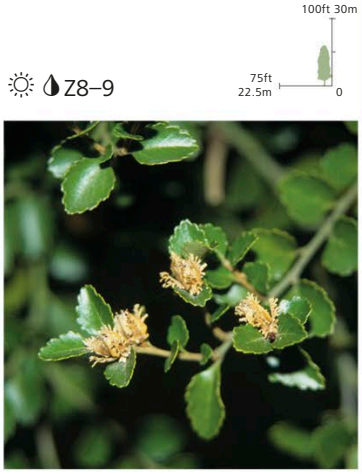
☼ 💧 Z7–9

GREEN/YELLOW

WHITE

Nothofagus betuloides
Evergreen, columnar tree with dense growth of ovate, glossy, dark green leaves on bronze-red shoots.

☼ 💧 Z8–9



Nothofagus menziesii (Silver beech)
Evergreen, conical tree with silvery-white bark when young. Produces tiny, rounded, sharply toothed, glossy, dark green leaves.

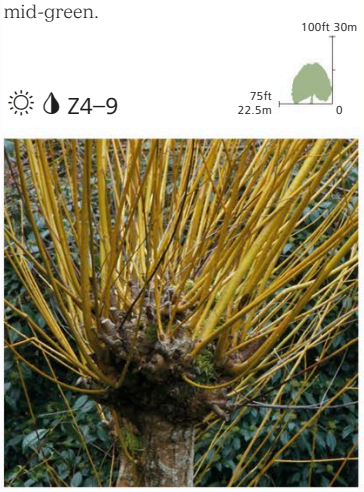
☼ 💧 Z8–9

Umbellularia californica
(California laurel)
Evergreen, spreading tree with aromatic, leathery, glossy, dark green leaves and creamy-yellow flowers in late spring. Pungent leaves may cause nausea and headache when crushed.

☼ 💧 Z7–9 ⓘ

Salix* x *sepulcralis* var. *chrysocoma
(Golden weeping willow)
Deciduous tree with slender, yellow shoots falling to the ground as a curtain. Yellow-green young leaves mature to mid-green.

☼ 💧 Z4–9

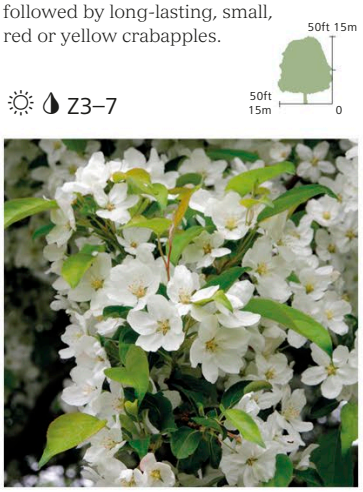


Salix alba* var. *vitellina
(Golden willow)
Deciduous, spreading tree, usually cut back hard to promote growth of strong young shoots that are bright orange-yellow in winter. Lance-shaped, mid-green leaves emerge in spring.

☼ 💧 Z6–9

Malus baccata* var. *mandschurica
(Manchurian crabapple)
Vigorous, deciduous, spreading tree with dark green leaves and a profusion of white flowers in clusters in midspring, followed by long-lasting, small, red or yellow crabapples.

☼ 💧 Z3–7



Malus hupehensis (Tea crabapple)
Vigorous, deciduous, spreading tree. Has deep green leaves, large, fragrant, white flowers, pink in bud, from mid- to late spring, followed by small, red-tinged, yellow crabapples in late summer and fall.

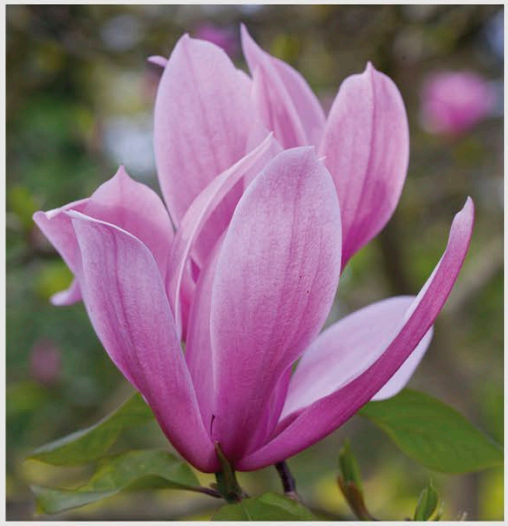
☼ 💧 Z5–8

Salix daphnoides (Violet willow)
Fast-growing, deciduous, spreading tree. Has lance-shaped, glossy, dark green leaves, silver, male catkins in spring, and purple shoots with bluish-white bloom in winter.

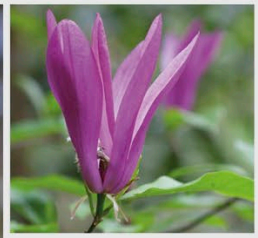
☼ 💧 Z5–9

MAGNOLIAS

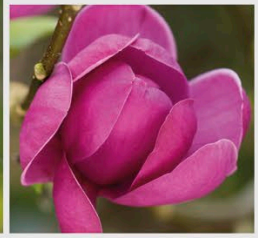
A mature magnolia in full bloom makes a spectacular sight in spring. Most magnolias are elegant in habit and though slow-growing, eventually form imposing trees and shrubs. The flowers are generally saucer-, star-, or goblet-shaped and often have a subtle fragrance. Colors range from pure white, white flushed or stained with pink or purple, to pink and rich red-purple. The genus includes some evergreen, summer-flowering species. These, and cultivars that are not fully hardy, are best planted against a sunny wall. Some magnolias prefer acid or neutral soil, but most tolerate any soil, provided it is humus-rich. Plenty of organic matter should be dug into the soil before planting. Avoid planting in exposed sites, as the flowers can be damaged by frosts.



M. 'Spectrum'

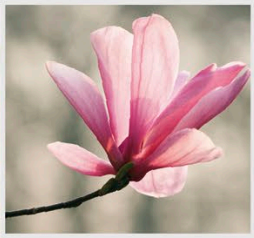


M. 'Susan'

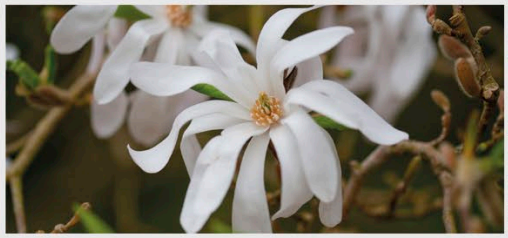


M. BLACK TULIP ('Jurmag1')

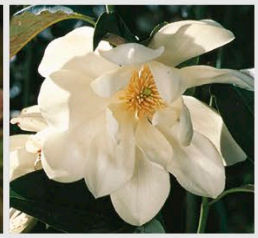
M. grandiflora 'Exmouth'



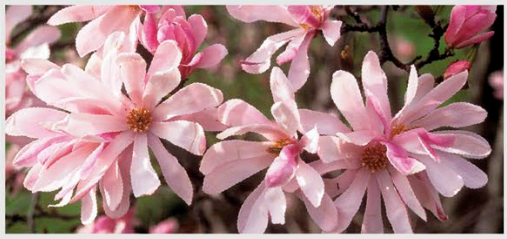
M. 'Galaxy'



M. stellata



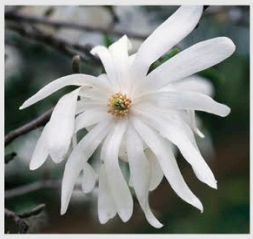
M. doltsopa



M. x *loebneri* 'Leonard Messel'

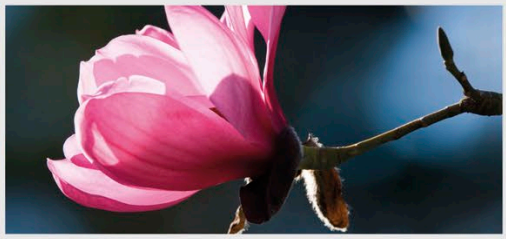
M. x *soulangeana* 'Rustica Rubra'

M. 'Elizabeth'

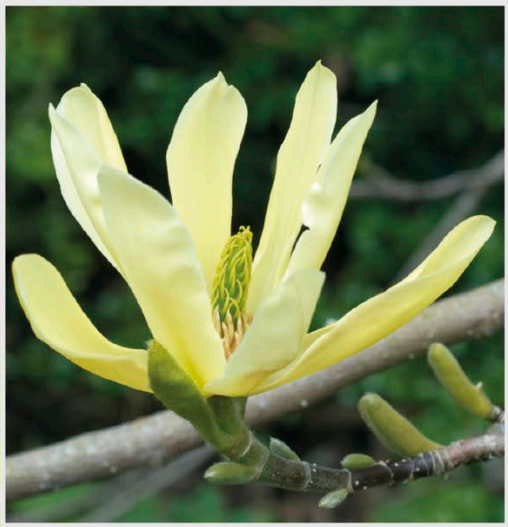


M. stellata 'Royal Star'

M. stellata 'Waterlily'



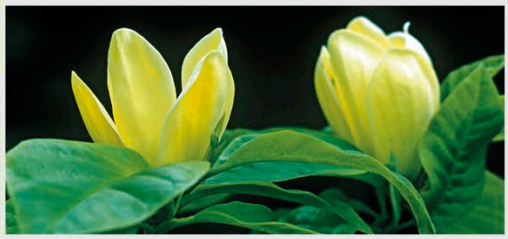
M. campbellii subsp. *mollicomata*



M. 'Butterflies'

M. wilsonii

M. liliiflora 'Nigra'

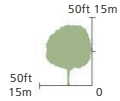


M. x *brooklynensis* 'Yellow Bird'

WHITE

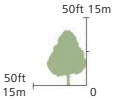
***Prunus avium* 'Plena'**
Deciduous, spreading tree with reddish-brown bark and masses of double, pure white flowers in spring. Dark green foliage turns red in fall.

☼ Z4–8 ⓘ



***Halesia tetraptera* Monticola Group**
(Silver bell, Snowdrop tree)
Fast-growing, deciduous, conical or spreading tree. Masses of pendent, bell-shaped, white flowers appear in late spring before leaves, followed by 4-winged fruits in fall.

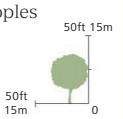
☼ Z6–9



PINK

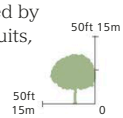
***Malus* 'Profusion'**
Deciduous, spreading tree. Dark green foliage is purple when young. Cup-shaped, deep purplish-pink flowers are freely borne in late spring, followed by small, red-purple crab apples in late summer and fall.

☼ Z4–8



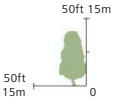
***Prunus padus* 'Watereri'**
Deciduous, spreading tree with elliptic, matte, dark green leaves. Bears long, stiff racemes of cup-shaped, almond-scented, white flowers, to 8in (20cm) long, in late spring, followed by small, pea-shaped, black fruits, bitter to the taste.

☼ Z4–8



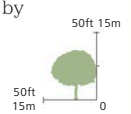
***Pyrus calleryana* 'Chanticleer'**
Deciduous, conical tree with glossy leaves that turn purplish in fall. Sprays of small, white flowers appear in spring. Resists fireblight.

☼ Z5–8



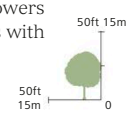
Melia azedarach
(Bead tree, Persian lilac)
Deciduous, spreading tree. Has dark green leaves with many leaflets and fragrant, star-shaped, pinkish-lilac flowers in spring, followed by pale orange-yellow fruits in fall. Min. 45°F (7°C).

☼ Z7–10



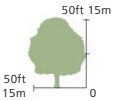
Prunus incisa* f. *yamadei
Deciduous, spreading tree. Sharply toothed, dark green leaves are reddish when young, orange-red in fall. In spring, bears a profusion of shallowly cup-shaped, pure white flowers that open from white buds with bright green calyces.

☼ Z6–8 ⓘ



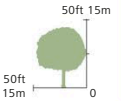
Fraxinus ornus (Manna ash)
Deciduous, round-headed tree. Has deep green leaves with 5–9 leaflets. Panicles of scented, creamy-white flowers appear in late spring and early summer.

☼ Z6–9 ⓘ



Prunus jamasakura (Hill cherry)
Deciduous, spreading tree bearing cup-shaped, white or pink flowers from mid- to late spring. Ovate leaves, bronze when young, mature to deep green.

☼ Z5–8 ⓘ



PINK

***Prunus* 'Kanzan'**
Deciduous, vase-shaped tree. Large, double, deep pink flowers are borne profusely from mid- to late spring amid bronze, young leaves that mature to dark green.

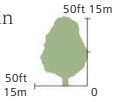
☼ ◊ Z6–8 ⓘ

***Magnolia* 'Heaven Scent'**
Vigorous, deciduous tree or shrub with fragrant, vase-shaped flowers, each with usually 9 petals that are pink outside, white within, borne from mid-spring to early summer. Leaves are broadly elliptic and glossy green.

◐ ◊ Z6–9

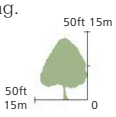
***Aesculus* x *neglecta* 'Erythroblastos'**
Deciduous, spreading tree. Leaves with 5 leaflets emerge bright pink, turn yellow, then dark green, and finally orange and yellow in fall. May bear panicles of yellow, or yellow-flushed red, flowers in summer.

◐ ◊ Z5–8 ⓘ



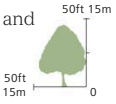
Paulownia tomentosa (Foxglove tree, Princess tree)
Deciduous, spreading tree. Has large, lobed, mid-green leaves and terminal sprays of fragrant, foxglovelike, pinkish-lilac flowers in spring.

☼ ◊ Z5–8

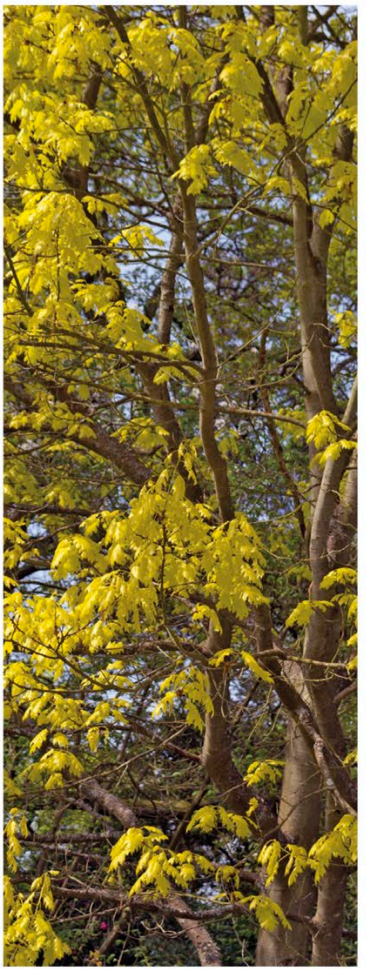


***Prunus padus* 'Colorata'**
Deciduous, spreading tree, conical when young. Produces pendent racemes of fragrant, cup-shaped, pink flowers in late spring, followed by small, black fruits. Ovate, purple young leaves mature to dark green and turn red or yellow in fall.

☼ ◊ Z4–8 ⓘ

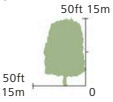


YELLOW



***Quercus robur* 'Concordia'**
Slow-growing, deciduous, spreading tree. Large, lobed leaves are golden yellow when young, becoming yellowish-green by midsummer. Produces best color in an open but sheltered position.

☼ ◊ Z5–9



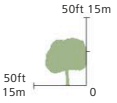
***Gleditsia triacanthos* f. *inermis* 'Sunburst'**
Deciduous, spreading tree with fernlike, glossy foliage that is golden-yellow when young, deep green in summer.

☼ ◊ Z3–7

WHITE

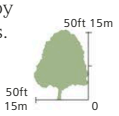
Styrax japonicus
Deciduous, spreading tree bearing in early summer a profusion of pendent, fragrant, bell-shaped, white flowers, sometimes tinged pink, amid glossy, dark green foliage.

☼ ◊ pH Z6–8



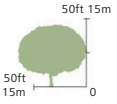
Ostrya virginiana (American hop hornbeam, Ironwood)
Deciduous, conical tree with dark brown bark and deep green leaves, yellow in fall. Has yellowish, male catkins in spring, followed by greenish-white fruit clusters.

☼ ◊ Z5–9



Catalpa speciosa
Deciduous, spreading tree. Panicles of large, white flowers marked with yellow and purple are borne in midsummer among glossy, mid-green leaves.

☼ ◊ Z4–8



Eucryphia cordifolia (Ulmo)
Evergreen, columnar tree bearing oblong, wavy-edged, dull green leaves, with gray down beneath. Large, saucer-shaped, white flowers are produced in late summer and fall.

☀ ◐ Z8–11

Pterostyrax hispida (Epaulette tree)
Deciduous, spreading tree or shrub with aromatic, gray bark and oblong to ovate, mid-green leaves, 8in (20cm) long. Large, pendent panicles of small, bell-shaped, white flowers are borne from early to midsummer.

☀ ◐ pH Z5–8

***Acer pseudoplatanus* f. *variegatum* 'Simon Louis Frères'**
Deciduous, spreading tree. Young leaves are marked with creamy-white and pink; older foliage is pale green with white markings.

☀ ◐ Z4–7

***Aesculus indica* 'Sydney Pearce'**
Deciduous, spreading tree with glossy, dark green leaves, bronze when young and orange or yellow in fall. Pinkish-white flowers, marked red and yellow, appear from early to midsummer.

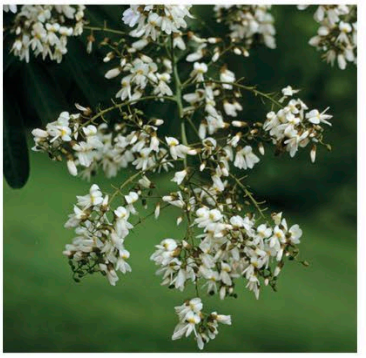
☀ ◐ Z7–8 ⓘ

Catalpa bignonioides
(Indian bean tree)
Deciduous, spreading tree. Large, light green leaves are purplish when young. White flowers marked with yellow and purple appear in summer, followed by long, cylindrical, pendent, seed pods.

☀ ◐ Z5–9

Drimys winteri (Winter's bark)
Evergreen, conical, sometimes shrubby tree with long, glossy, pale or dark green leaves, usually bluish-white beneath. Bears clusters of fragrant, star-shaped, white flowers in early summer.

☀ ◐ Z8–11



Toona sinensis
Deciduous, broadly columnar tree with peeling, brown bark. Has large, pinnate, dark green leaves, which turn yellow in fall. Bears fragrant, white flowers in midsummer. Shoots are onion-scented.

☀ ◐ Z5–8

Catalpa bungei
Deciduous, broadly columnar tree grown for its bell-shaped, foxglovelike, delicate pink flowers, from early to midsummer, followed by long, pendulous seed pods. Has large, heart-shaped, bright green leaves ending in a long point.

☀ ◐ Z6–8

***Quercus cerris* 'Argenteovariegata'**
Deciduous, spreading tree. Deeply toothed or lobed, glossy, dark green leaves have creamy-white margins.

☀ ◐ Z7–9

***Eucryphia* x *nymansensis* 'Nymansay'**
Evergreen, columnar tree. Some of the leathery, glossy, dark green leaves are simple, others consist of 3 (rarely 5) leaflets. Clusters of large, white flowers open in late summer or early fall.

☀ ◐ Z8–9

Sorbus pseudohupehensis
Deciduous, spreading tree with leaves of 4–8 pairs of blue-green leaflets turning orange-red in late fall. White flowers in spring are followed by long-lasting, pink fruits.

☀ ◐ Z4–7 ⓘ

Broussonetia papyrifera
(Paper mulberry)
Deciduous, round-headed tree. Dull green leaves are large, broadly ovate, toothed, and sometimes lobed. In early summer, small globes of purple flowers appear on female plants.

☼ 💧 Z6–9

Hovenia dulcis (Japanese raisintree)
Deciduous, spreading tree with large, glossy, dark green leaves. In summer it may bear small, greenish-yellow flowers, the stalks of which become red, fleshy, and edible.

☼ 💧 Z6–8

Fraxinus velutina (Arizona ash)
Deciduous, spreading tree. Leaves vary but usually consist of 3 or 5 narrow, velvety, gray-green leaflets.

☼ 💧 Z6–9 ❗

Meliosma veitchiorum
Deciduous, spreading tree with sturdy, gray shoots and large, dark green, red-stalked leaves with 9 or 11 leaflets. Small, fragrant, white flowers in late spring are followed by violet fruits in fall.

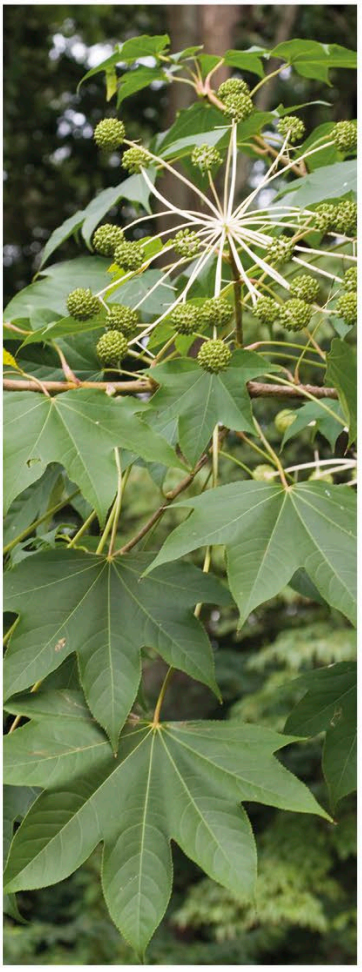
☼ 💧 Z9–11

***Acer negundo* 'Variegatum'**
Fast-growing, deciduous, spreading tree. Has pinkish- then white-margined, bright green leaves with 3 or 5 leaflets. Inconspicuous, greenish-yellow flowers appear in late spring.

☼ 💧 Z5–8

***Populus tremula* 'Pendula'**
(European aspen)
Vigorous, deciduous, weeping tree. Leaves, reddish when young, gray-green in summer, and yellow in fall, tremble in the wind. Has purplish catkins in late winter and spring.

☼ 💧 Z2–8



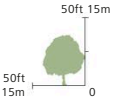
Kalopanax septemlobus
Deciduous, spreading tree with spiny stems, large, 5–7-lobed, glossy, dark green leaves, and umbels of small, white flowers, then black fruits in fall.

☼ 💧 Z5–9

Prunus maackii (Manchurian cherry)
Deciduous, conical tree with peeling, yellowish-brown bark and spikes of small, white flowers in midspring, followed by spherical, cherrylike, glossy black fruit. Pointed, dark green leaves turn yellow in fall.

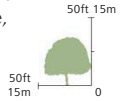
☼ 💧 Z2–6

Quercus marilandica (Blackjack oak)
Deciduous, spreading tree. Large leaves, 3-lobed at the apex, are glossy, dark green above, paler beneath, and turn yellow, red, or brown in fall.



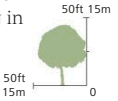
☼ 💧 Z6–9

Phellodendron chinense
Deciduous, spreading tree. Aromatic leaves, with 7–13 oblong leaflets, are dark green, turning yellow in fall. Pendent racemes of greenish flowers in early summer are followed on female trees by berrylike, black fruits.



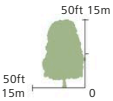
☼ 💧 Z5–8

Idesia polycarpa
Deciduous, spreading tree with large, heart-shaped, glossy, dark green leaves on long stalks. Small, fragrant, yellow-green flowers in midsummer are followed in fall, on female plants, by red fruits hanging in clusters.



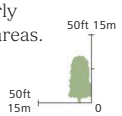
☼ 💧 Z6–9

Quercus macrocarpa (Bur oak)
Slow-growing, deciduous, spreading tree. Large, oblong-ovate, lobed, glossy, dark green leaves turn yellow or brown in fall.

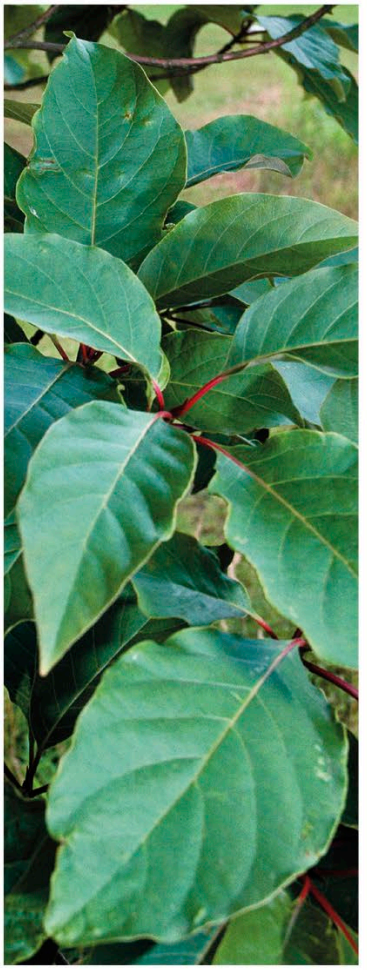


☼ 💧 Z3–9

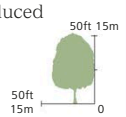
Alnus glutinosa **'Imperialis'**
Slow-growing, deciduous, conical tree with rounded, deeply cut, lobed leaves, bright yellow until midsummer, later becoming pale green. Produces yellow-brown catkins in early spring. Suitable for boggy areas.



☼ 💧 Z3–7



Emmenopterys henryi
Deciduous, spreading tree. Large, pointed, dark green leaves are bronze-purple when young. Clusters of white flowers (some bearing a large, white bract) are rarely produced except in hot summers.



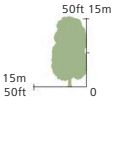
☼ 💧 Z7–11

***Catalpa bignonioides* 'Aurea'**
Deciduous, spreading tree with broadly ovate, bright yellow leaves, bronze when young. Bell-shaped, white flowers, marked with yellow and purple, borne in summer, are followed by long, pendent, cylindrical pods, often persisting after leaf fall.

☼ 💧 Z5–9

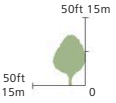
***Robinia pseudoacacia* 'Frisia'**
Deciduous, spreading tree with luxuriant leaves divided into ovate leaflets, golden-yellow when young, greenish-yellow in summer, and orange-yellow in fall.

☼ 💧 Z4–9 ⓘ



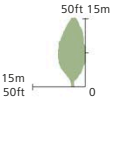
Acer rufinerve (Snake-bark maple)
Deciduous tree with arching branches striped green and white. In fall, the 3-lobed, dark green leaves turn brilliant red and orange.

☼ 💧 Z5–9



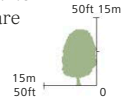
***Acer rubrum* 'Columnare'**
Deciduous, slender, upright tree with lobed, dark green foliage becoming a fiery column of red and yellow in fall.

☼ 💧 Z3–9



Oxydendrum arboreum (Sorrel tree)
Deciduous, small tree or large shrub, with elliptic to lance-shaped, glossy, dark green leaves, turning brilliant red, yellow, and purple in fall. Large panicles of cylindrical to urn-shaped white flowers are borne in summer and fall.

☼ 💧 pH Z5–9

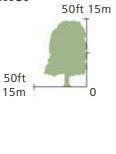


***Acer davidii* 'Madeline Spitta'**
Deciduous tree with upright branches that are striped green and white. Glossy, dark green foliage turns orange in fall after the appearance of winged, green fruits that ripen reddish-brown.

☼ 💧 Z5–7

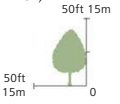
Aesculus flava (Sweet buckeye, Yellow buckeye)
Deciduous, spreading tree. Glossy, dark green leaves, with 5 or 7 ovate leaflets, turn orange-red in fall. Yellow flowers in late spring and early summer are followed by round fruits (chestnuts).

☼ 💧 Z3–8 ⓘ



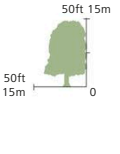
Stewartia monadelpha
Deciduous, spreading tree with peeling bark and glossy, dark green leaves that turn orange and red in fall. Small, violet-anthered, cup-shaped, white flowers are borne in midsummer, followed by small fruits.

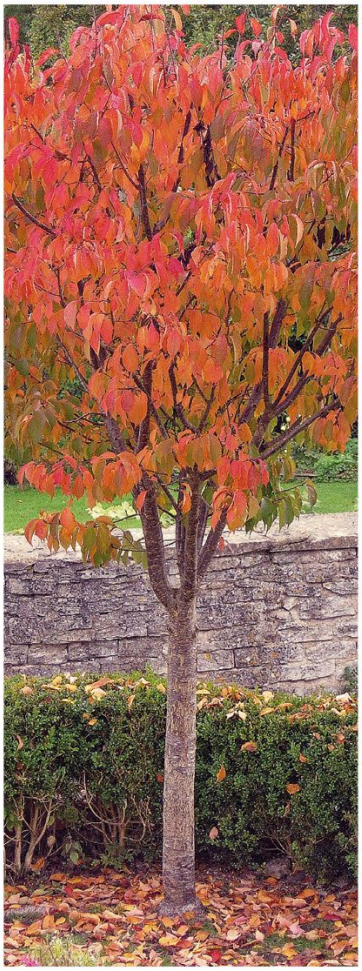
☼ 💧 pH Z6–9



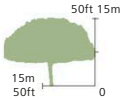
Acer henryi
Deciduous, spreading tree. Dark green leaves with 3 ovate, toothed leaflets turn bright orange and red in fall.

☼ 💧 Z4–8



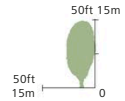


Prunus sargentii (Sargent cherry)
Deciduous, spreading tree. Elliptic, dark green leaves are red when young, turning brilliant orange-red in early fall. Clusters of blush-pink flowers appear in mid-spring.



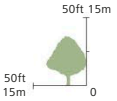
☼ 💧 Z5–9 ⓘ

Acer saccharum **subsp. *nigrum* 'Temple's Upright'**
Deciduous, columnar tree. In fall, large, lobed leaves turn brilliant orange and red.



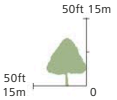
☼ 💧 Z4–9

Acer capillipes (Snake-bark maple)
Deciduous, spreading tree. Has 3-lobed, bright green leaves that turn brilliant red and orange in fall. Older branches are striped green and white.



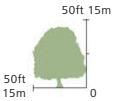
☼ 💧 Z5–7

Nyssa sinensis
Deciduous, broadly conical tree. Has oblong to elliptic, narrow, pointed leaves that are purplish when young, dark green when mature, and brilliant scarlet in fall.



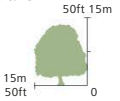
☼ 💧 Z7–9

Quercus* x *heterophylla
(Bartram's oak)
Deciduous, spreading tree with toothed, glossy, dark green leaves that turn orange-red and yellow in fall.



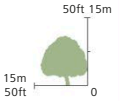
☼ 💧 Z5–8

Malus tschonoskii
Deciduous, conical tree with broadly ovate, glossy, mid-green leaves that turn brilliant shades of orange, red, and purple in fall. Single, pink-tinged, white flowers, in late spring, are followed by red-flushed, yellowish-green fruits.



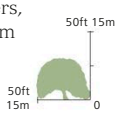
☼ 💧 Z5–8

Acer japonicum **'Vitifolium'**
Vigorous, deciduous, bushy tree or large shrub with large, shallowly lobed, mid-green leaves that turn a vivid red, orange, and purple in fall.



☼ 💧 Z5–7

Parrotia persica (Persian ironwood)
Deciduous, spreading, short-trunked tree with flaking, gray and fawn bark. Rich green leaves turn yellow, orange, and red-purple in fall. Dense heads of flowers, with crimson anthers, are borne on bare wood from winter to early spring.



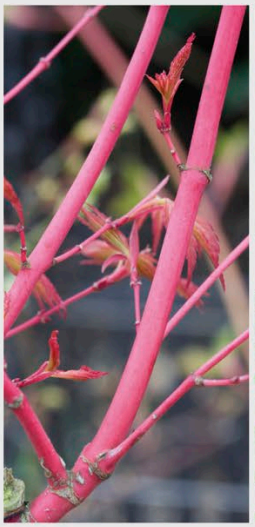
☼ 💧 Z4–7

ORNAMENTAL BARK

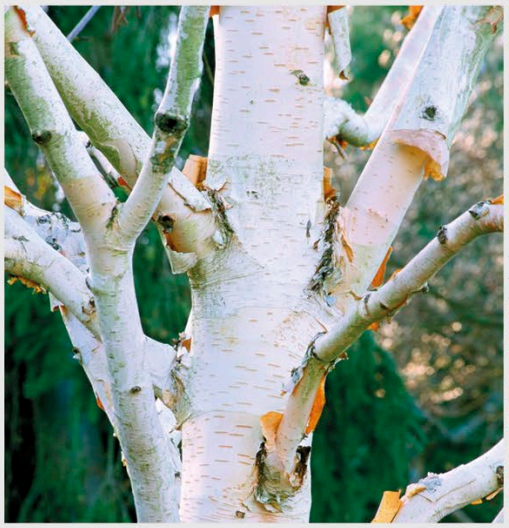
Of the many ornamental features offered by trees, including flowers, fruit, and foliage, it is probably bark that makes the greatest impact in a garden. This is partly because bark is not transient and offers interest every day of the year and throughout the mature life of the tree. Chosen carefully, trees with ornamental bark can lighten up the darkest corner and provide superb contrast to other plants. While maple (*Acer*), birch (*Betula*), and cherry (*Prunus*) are obvious choices, there are many other species with stunning, textured or colored bark, such as the patterned stems of eucalyptus and *Stewartia*. Some trees display their colorful bark from an early age, others may take a few years to develop—but the end result is well worth waiting for.

Stewartia pseudocamellia

Pinus bungeana



***Acer palmatum* 'Sango-kaku'**



***Betula utilis* subsp. *jacquemontii* 'Grayswood Ghost'**

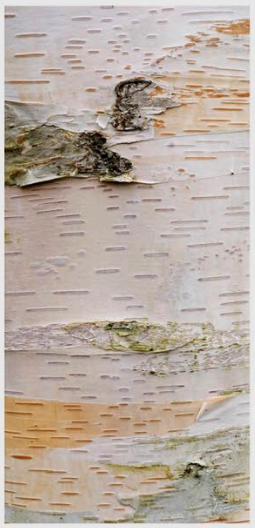
Eucalyptus pauciflora* subsp. *niphophila

Pinus sylvestris

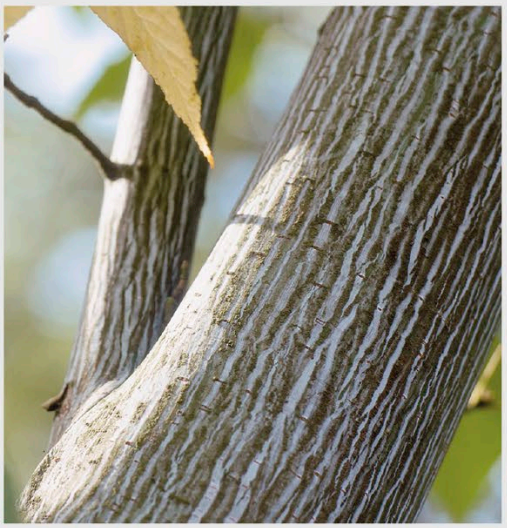
Luma apiculata

Acer grosseri

Acer griseum



***Betula utilis* subsp. *jacquemontii* 'Jermyns'**



Acer davidii

Betula utilis* subsp. *albosinensis

Prunus serrula

Betula ermanii

Quercus suber

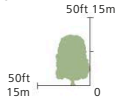
Betula nigra

***Acer pensylvanicum* 'Erythrocladum'**

FALL

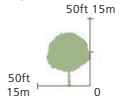
YELLOW

Betula lenta (Sweet birch, cherry birch)
Deciduous, broadly spreading tree that gives off a sweet fragrance when leaves, shoots, or bark are crushed. Has dark red bark with purple flakes. Ovate, mid-green leaves, to 5in (12cm) long, fleetingly turn vibrant gold in fall.



☼ 💧Z3–7

Cladrastis kentukea (Yellowwood)
Deciduous, round-headed tree. Leaves of 7 or 9 rounded-ovate leaflets are dark green, turning yellow in fall. Clusters of fragrant, pealike, yellow-marked, white flowers appear in early summer.



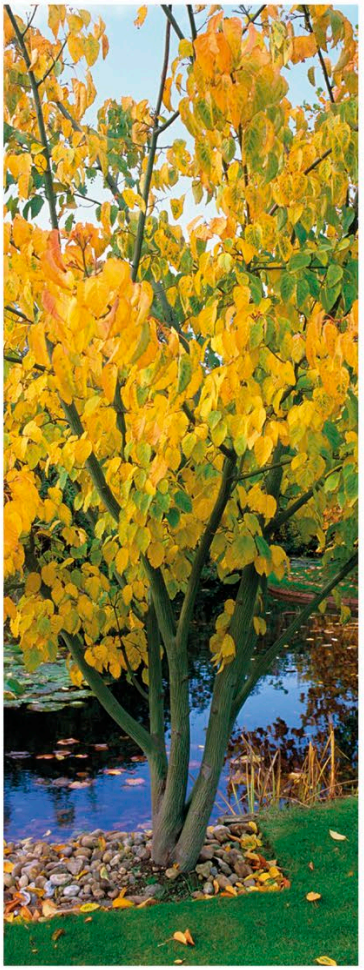
☼ 💧Z4–9

Fagus sylvatica **'Dawyck'**
Deciduous, narrowly columnar tree with upward-sweeping branches and ovate, lime-green leaves, which darken as the season progresses, before turning a rich copper color in fall. The tree's form tends to broaden out in maturity.

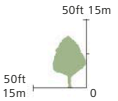
☼ 💧Z4–7

Fraxinus excelsior **'Pendula'**
Deciduous tree with slender, weeping branches, forming a spreading, umbrella-like canopy. Has dull green leaves with 9–11 ovate, shallowly toothed leaflets. Most trees are grafted onto *F. excelsior* at 10–16ft (3–5m) above the ground.

☼ 💧Z5–8



Acer pensylvanicum
(Snakebark maple, striped maple)
Deciduous, upright tree. Shoots are boldly striped green and white. Large, lobed, mid-green leaves turn bright yellow in fall.

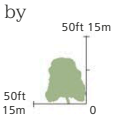


☼ 💧Z3–7

ALL YEAR

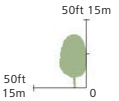
GREEN

Arbutus x andrachnoides
Evergreen, bushy, spreading tree with peeling, reddish-brown bark and glossy, dark green foliage. Clusters of small, white flowers in fall to spring are followed by small, strawberrylike, orange or red fruits.



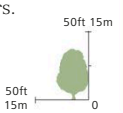
☼ 💧Z8–9

Eucalyptus pauciflora (Cabbage gum, weeping gum, white sallee)
Evergreen, spreading tree with peeling, white, young bark and red young shoots. In summer, white flower clusters appear amid glossy, bright gray-green foliage.



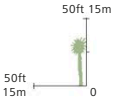
☼ 💧Z9–11

Trochodendron aralioides
Evergreen, broadly conical tree with glossy, dark green foliage. In late spring and early summer bears clusters of unusual, petal-less, wheellike, green flowers.



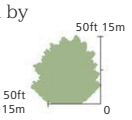
☼ 💧Z6–11

Trachycarpus fortunei
(Chusan palm, Windmill palm)
Evergreen palm with unbranched stem and a head of large, deeply divided, fanlike, dark green leaves. Panicles of fragrant, yellow flowers are borne in early summer.



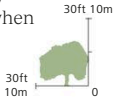
☼ ◊ Z8–11

Laurus nobilis (Bay laurel, Sweet bay)
Evergreen, broadly conical tree with narrowly ovate, leathery, very aromatic, glossy, dark green leaves. Produces small, star-shaped, pale yellow flowers in spring, followed by spherical to ovoid, green then black berries.



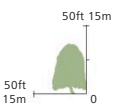
◑ ◊ Z8–11

Mespilus germanica (Medlar)
Deciduous, spreading tree or large shrub. Has narrowly ovate, dark green leaves that turn orange-brown in fall. Bears white flowers in spring–summer, followed by brown fruits in fall, edible when half rotten.



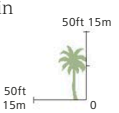
☼ ◊ Z6–9

Quercus myrsinifolia
Evergreen, rounded tree with narrow, pointed, glossy, dark green leaves, bronze-red when young.



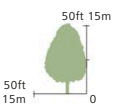
☼ ◊ Z7–9

Jubaea chilensis
(Chilean wine palm, Coquito)
Slow-growing, evergreen palm with a massive trunk and large, silvery-green leaves. Produces panicles of small, maroon and yellow flowers in spring and woody, yellow fruits in fall.



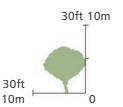
☼ ◊ Z8–11

***Salix babylonica* var. *pekinensis* 'Tortuosa'** (Dragon's-claw willow)
Fast-growing, deciduous, spreading tree with curiously twisted shoots and contorted, narrow, tapering, bright green leaves.



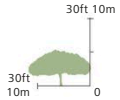
☼ ◖ Z6–9

Crataegus orientalis
Deciduous, spreading tree with deeply lobed, hairy, dark green leaves. A profusion of white flowers in late spring or early summer is followed by spherical, orange-red to red fruits.



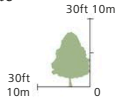
☼ ◊ Z6–8 ⓘ

***Prunus* 'Shôgetsu'**
Deciduous, round-topped tree. In late spring, pink buds open to large, double, white flowers that hang in clusters from long stalks. Mid-green leaves turn orange and red in fall.



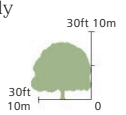
☼ 💧Z6–8 ⓘ

***Malus* 'Snowcloud'**
Deciduous, compact tree of upright habit, with ovate, bronze leaves that turn dark green. In spring, pink flower buds open to produce masses of semidouble to double, long-lasting, white flowers, followed in late summer by yellow fruits.



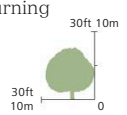
☼ 💧Z4–7

Aesculus californica
(California buckeye)
Deciduous, spreading, sometimes shrubby tree. Dense clusters of fragrant, sometimes pink-tinged, white flowers are borne in spring and early summer. Small, dark green leaves have 5–7 leaflets.



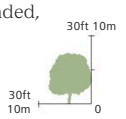
☼ 💧Z7–8 ⓘ

Prunus incisa (Fuji cherry)
Deciduous, spreading shrub or small tree. White or pale pink flowers are produced in early spring. Sharply toothed, dark green leaves are reddish when young, turning orange-red in fall.



☼ 💧Z4–9 ⓘ

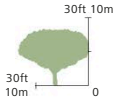
Amelanchier laevis
Deciduous, spreading tree or large shrub. Ovate, bronze, young leaves turn dark green in summer, red and orange in fall. Racemes of white flowers in spring are followed by rounded, fleshy, blue-black fruits.



☼ 💧Z5–9

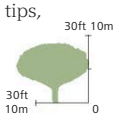
WHITE

***Prunus* 'Taihaku'** (Great white cherry)
Vigorous, deciduous, spreading tree. Very large, single, pure white flowers are borne in mid-spring among bronze-red, young leaves that mature to dark green.

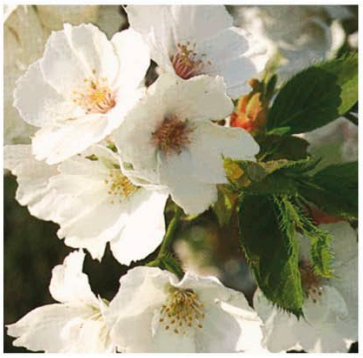


☼ 💧Z6–8 ⓘ

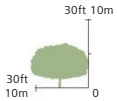
***Prunus* 'Ukon'**
Vigorous, deciduous, spreading tree with dark green foliage, pale bronze when young. In mid-spring, clusters of double flowers, yellowish-white on the outsides, slightly pink at the tips, open from pink buds.



☼ 💧Z6–8 ⓘ



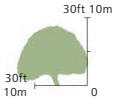
***Prunus* 'Shirotae'**
Deciduous, spreading tree with distinctive, horizontal branches. Large, fragrant, single or semidouble, white flowers are borne in mid-spring. Foliage turns orange-red in fall.



☼ 💧Z6–8 ⓘ

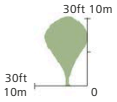
PINK

Prunus* x *yedoensis (Tokyo cherry)
Deciduous, round-headed tree with spreading, arching branches and dark green foliage. Umbels of pink buds open to white or pale pink flowers in early spring.



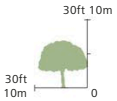
☼ 💧Z5–8 ⓘ

***Prunus* 'Spire'**
Deciduous, vase-shaped tree, conical when young. Pale pink flowers appear profusely from early to mid-spring. Dark green leaves, bronze when young, turn bright orange-red in fall.



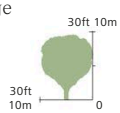
☼ 💧Z6–8 ⓘ

***Prunus* 'Hokusai'**
Deciduous, spreading tree. Ovate, bronze, young leaves mature to dark green, then turn orange and red in fall. Semidouble to double, pale pink flowers are borne in mid-spring.



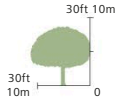
☼ 💧Z5–8 ⓘ

***Prunus* 'Pandora'**
Deciduous tree, upright when young, later spreading. Produces masses of pale pink flowers in early spring. Leaves are bronze when young, dark green in summer, and often orange and red in fall.



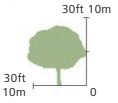
☼ 💧Z6–8 ⓘ

***Prunus pendula* 'Stellata'**
Deciduous, spreading tree. Clusters of star-shaped, clear pink flowers with narrow, pointed petals, red in bud, open from early to mid-spring. Dark green leaves turn yellow in fall.



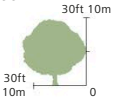
☼ 💧Z6–8 ⓘ

***Prunus* 'Accolade'**
Deciduous, spreading tree with clusters of deep pink buds opening to semidouble, pale pink flowers in early spring. Toothed, mid-green leaves turn orange-red in fall.



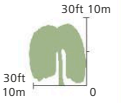
☼ 💧Z4–9 ⓘ

Cercis siliquastrum (Judas tree)
Deciduous, spreading, bushy tree. Clusters of pealike, bright pink flowers are borne in mid-spring, before or with heart-shaped leaves, followed by long, purplish-red pods in late summer.



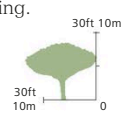
☼ 💧Z6–9

***Prunus* 'Kiku-shidare-zakura'**
Deciduous, weeping tree. Has double, bright pink flowers that cover pendent branches from mid- to late spring.



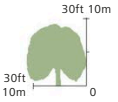
☼ 💧Z4–9 ⓘ

***Prunus* 'Fugenzo'**
Deciduous, spreading tree with bronze-red leaves turning orange-red in fall. Pale pink buds open to fragrant, double, white blooms that turn pink before they fade in late spring.



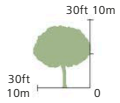
☼ 💧Z6–8 ⓘ

***Prunus pendula* 'Pendula Rubra'**
Deciduous, weeping tree that bears deep rose-pink flowers in spring, opening from carmine-red buds, before ovate, dark green leaves appear; these turn yellow in fall.



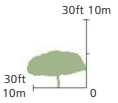
☼ 💧Z6–8 ⓘ

***Prunus* 'Pink Perfection'**
Deciduous, upright tree that bears double, pale pink flowers in late spring. Ovate leaves are bronze when young, dark green in summer.

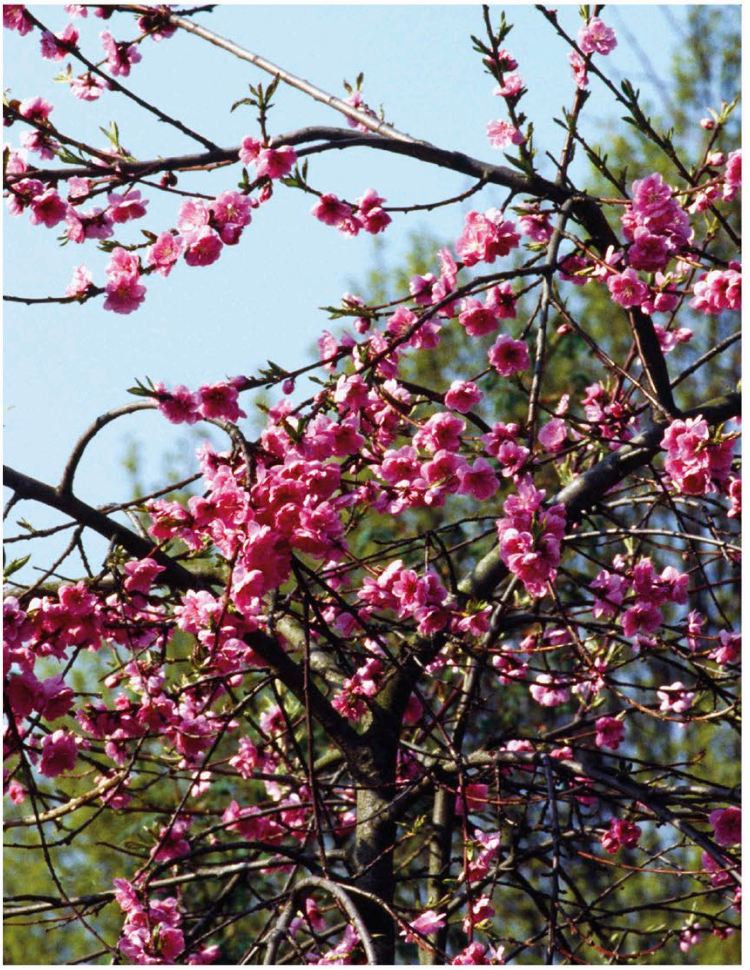


☼ 💧Z6–8 ⓘ

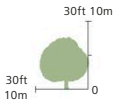
***Prunus* 'Ichiyo'**
Deciduous, spreading tree with elliptic, dark green leaves, bronze when young. Wide-open, double, soft pink flowers are borne in long, pendent clusters in mid- and late spring.



☼ 💧Z5–8 ⓘ



***Prunus incisa* 'Oshidori'**
Deciduous, spreading tree with narrow, toothed, dark green leaves. In spring, bears long-lasting, pendent, double, pale pink flowers, 1½in across, which age to deep pink.



☼ 💧Z5–7

PINK

Malus* x *floribunda (Japanese crab apple)
Deciduous, spreading, dense-headed tree with pale pink flowers, red in bud, produced from mid- to late spring, followed by tiny, pea-shaped, yellow crab apples in fall.

☼ 💧Z4–8

***Prunus* 'Pink Shell'**
Deciduous, spreading tree with ovate, bronze-colored leaves that turn bright green in early summer, then orange in fall. In mid-spring, a profusion of fragrant, 5-petaled, single, long-stalked, shell-pink flowers cover the branches.

☼ 💧Z5–8

***Acer pseudoplatanus* 'Brilliantissimum'**
Slow-growing, deciduous, spreading tree. Lobed leaves are salmon-pink when young, then turn yellow and finally dark green in summer.

☼ 💧Z4–7

RED

***Crataegus laevigata* 'Paul's Scarlet'**
Deciduous, spreading tree. Produces toothed, glossy, dark green leaves and a profusion of double, red flowers in late spring and early summer.

☼ 💧Z5–8 ⓘ

***Malus* 'Royalty'**
Deciduous, spreading tree with glossy, purple foliage. Crimson-purple flowers are borne from mid- to late spring, followed by dark red crab apples in fall.

☼ 💧Z4–8

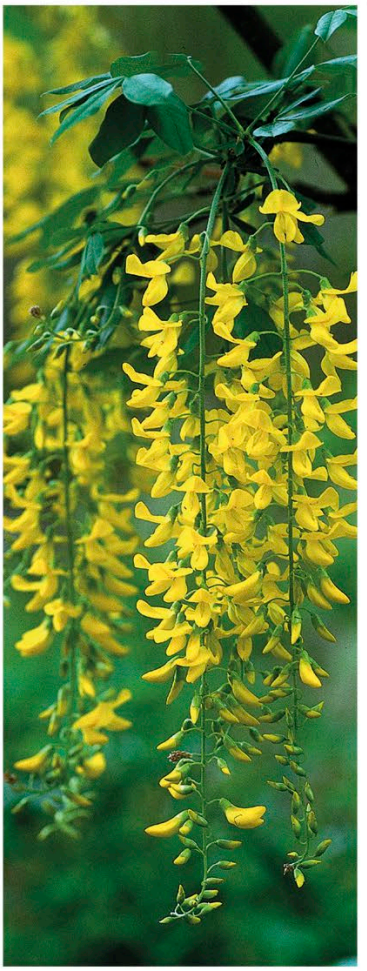
***Cercis canadensis* f. *alba* 'Forest Pansy'**
Deciduous, spreading tree or shrub. In mid-spring, bears flowers that are magenta in bud, opening to pale pink, before heart-shaped, reddish-purple leaves appear.

☼ 💧Z5–8

***Acacia baileyana* 'Purpurea'**
Evergreen, spreading tree with divided, fernlike, 2-pinnate, bronze-purple, young leaves that turn silver-gray later in spring. Racemes of sulphur-yellow flowers are produced from late winter to early spring. Best grown against a wall.

☼ 💧 pH Z10–11

YELLOW



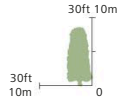
***Laburnum* x *watereri* 'Vossii'** (Voss's laburnum)
Deciduous, spreading tree. Leaves, consisting of 3 leaflets, are glossy, deep green. Pendent chains of large, yellow flowers are borne in late spring and early summer.

☼ 💧Z6–8 ⓘ

Sophora tetraptera
Semievergreen, spreading tree or large shrub with dark green leaves composed of many tiny leaflets. Clusters of golden-yellow flowers are borne in late spring.

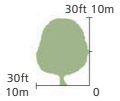
☼ 💧Z11–15 ⓘ

Eucryphia lucida
Evergreen, upright, bushy tree with narrow, glossy, dark green leaves and fragrant, white flowers in early or midsummer.



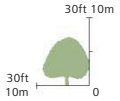
Z9–10

Eucryphia glutinosa
Deciduous, upright or spreading tree. Glossy, dark green leaves, consisting of 3–5 leaflets, turn orange-red in fall. Large, fragrant, white flowers are borne from mid- to late summer.



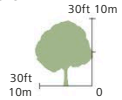
Z8–11

Hoheria lyallii
Deciduous, spreading tree with deeply toothed, gray-green leaves. Clusters of white flowers are borne in midsummer.



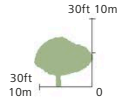
Z9–11

***Acer crataegifolium* 'Veitchii'**
Deciduous, bushy tree with branches streaked with green and white. Small, pointed, dark green leaves, blotched with white and paler green, turn deep pink and reddish-purple in fall.



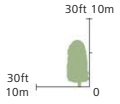
Z6–8

Maackia amurensis
Deciduous, spreading tree with deep green leaves consisting of 7–11 leaflets. Dense, upright racemes of white flowers are produced from mid- to late summer.



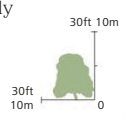
Z5–7

Hoheria angustifolia
Evergreen, columnar tree with narrow, glossy, dark green leaves. Shallowly cup-shaped, white flowers are borne from mid- to late summer.



Z9–11

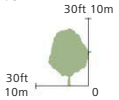
Cornus kousa
Deciduous, small tree or shrub with ovate, glossy, dark green leaves that turn bright red-purple in fall. Large, white bracts, surrounding insignificant flowers, in early summer, are followed by strawberrylike fruits.



Z5–8

PINK

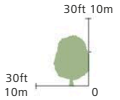
***Lagerstroemia indica* 'Seminole'**
Deciduous, compact, rounded tree or large shrub, bearing panicles of mid-pink flowers, with strongly waved petals, from midsummer to early fall. Narrowly ovate to oblong, dark green leaves are bronze when young.



☼ 💧 Z7–9

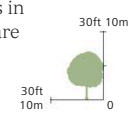
RED

***Aesculus pavia* 'Atrosanguinea'**
Deciduous, round-headed, sometimes shrubby tree. In summer, panicles of dark red flowers are borne among glossy, dark green leaves, which have 5–7 narrow leaflets.



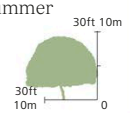
☼ 💧 Z5–9 ⓘ

***Robinia* x *slavinii* 'Hillieri'**
Deciduous, round-headed, spiny tree. Pinnate, dark green leaves, with 9 or 11, ovate-shaped leaflets, turn yellow in fall. In early summer, bears pealike, fragrant, lilac-pink flowers in loose racemes. Branches are prone to wind damage.



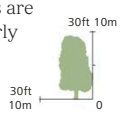
☼ 💧 Z5–9

Albizia julibrissin* f. *rosea
Deciduous, spreading, large shrub or small tree. Large leaves are light to mid-green and divided into many leaflets. Clusters of brushlike, pink flowers are borne in late summer or fall.



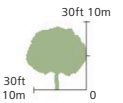
☼ 💧 Z6–9

Embothrium coccineum
(Chilean firebush)
Evergreen, upright, suckering tree or large shrub, with lance-shaped, glossy, deep green leaves. Clusters of scarlet, occasionally yellow, flowers are borne in late spring and early summer.



◑ 💧 pH Z8–11

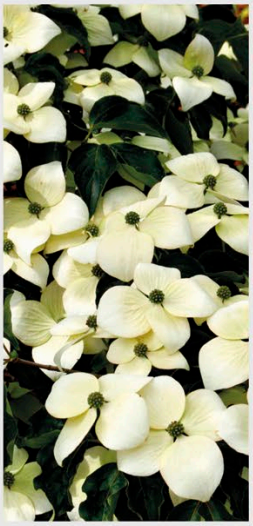
***Prunus cerasifera* 'Nigra'**
Deciduous, round-headed tree with deep purple leaves, red when young. Pink flowers are borne in profusion from early to mid-spring.



☼ 💧 Z5–9 ⓘ

FLOWERING DOGWOODS

A genus of about 50 species of hardy plants, *Cornus* is perhaps best known for its shrubby dogwoods, such as *Cornus alba* 'Sibirica', which produce brightly colored winter stems. However, the flowering trees within this genus have much to offer, as they are highly ornamental, ideal for small gardens, and easy to grow—many accommodating of a wide range of soil types. The majority flower in late spring or early summer. Their "flowers" consist of a rounded hub of tiny blooms, surrounded by showy petallike bracts, up to 3in (7.5cm) across on some cultivars, which range in color from pure white, cream, and yellow, to pink and red. In good summers, attractive, edible, strawberrylike fruits develop after flowering. Several species, such as *Cornus kousa*, also produce striking fall leaf color.



***C. kousa* 'National'**

***C. kousa* 'Miss Satomi'**

***C. florida* 'Cherokee Chief'**

C. alternifolia

***C. nuttallii* 'Monarch'**

***C. florida* 'Rainbow'**

C. controversa

***C. alternifolia* 'Argentea' Ⓘ**

***C.* 'Porlock' Ⓘ**

C. mas

***C. kousa* var. *chinensis* 'China Girl'**

C. capitata

***C.* 'Eddie's White Wonder' Ⓘ**

C. kousa* var. *chinensis

***C. mas* 'Aureoelegantissima'**

Pseudopanax ferox
Evergreen, upright tree with long, narrow, rigid, sharply toothed leaves that are dark bronze-green overlaid white or gray.

☼ 💧Z8–11

Ehretia dicksonii
Deciduous, spreading tree with stout, ridged branches and large, dark green leaves. Large, flattish heads of small, fragrant, white flowers are borne in midsummer.

☼ 💧Z7–11

***Cydonia oblonga* 'Vranja'**
(Common quince)
Deciduous, spreading tree. Pale green leaves, gray-downy beneath, mature to dark green and set off large, white or pale pink flowers in late spring and, later, very fragrant, golden-yellow fruits.

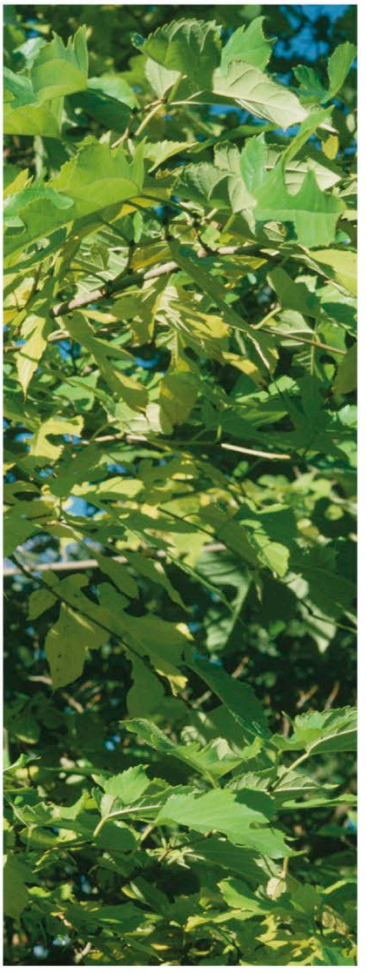
☼ 💧Z5–9

***Betula pendula* 'Youngii'**
(Young's weeping birch)
Deciduous, weeping tree forming a mushroom-shaped dome of thread-like branchlets. Has diamond-shaped, serrated leaves and smooth, white bark that is fissured black at maturity.

☼ 💧Z2–7

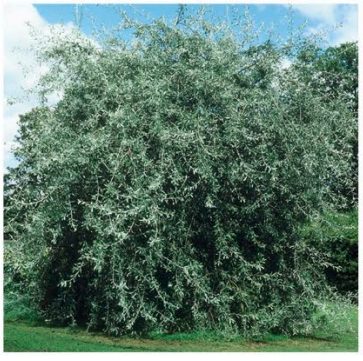
Acer carpinifolium (Hornbeam maple)
Deciduous tree of elegant habit, often with several main stems. Prominent-veined, hornbeamlike leaves turn golden-brown in fall.

☼ 💧Z4–7



***Morus alba* 'Laciniata'**
(White mulberry)
Deciduous, spreading tree. Has rounded, deeply lobed, glossy leaves that turn yellow in fall and bears edible, pink, red or purple fruits in summer.

☼ 💧Z4–8



***Pyrus salicifolia* 'Pendula'**
Deciduous, weeping, mound-shaped tree with white flowers in midspring and narrow, gray leaves.

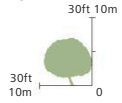
☼ 💧Z5–9

***Ulmus glabra* 'Camperdownii'**
Deciduous, strongly weeping tree with twisted branches. Leaves are very large, rough and matte, dark green.

☼ 💧Z3–9

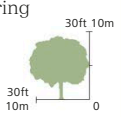
YELLOW

Paraserianthes lophantha
(Cape wattle)
Fast-growing, deciduous, spreading tree. Has fernlike, dark green leaves comprising many leaflets. Creamy-yellow flower spikes are borne in late spring to summer.



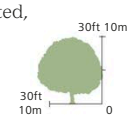
☼ 💧Z8–10

Laburnum alpinum
(Scotch laburnum)
Deciduous, spreading tree. Leaves consist of 3 glossy, dark green leaflets. Long, slender chains of bright yellow flowers are borne in late spring or early summer.



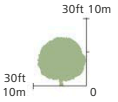
☼ 💧Z4–7 ⓘ

Koelreuteria paniculata
(Golden-rain tree, Pride of India)
Deciduous, spreading tree with pinnate, mid-green leaves, turning yellow in fall. Bears large panicles of yellow flowers in summer, followed by inflated, bronze-pink fruits.



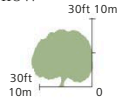
☼ 💧Z6–9

***Acer shirasawanum* 'Aureum'**
Deciduous, bushy tree or large shrub. Has rounded, bright yellow leaves with 7–11 lobes.



☼ 💧Z5–7

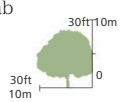
Genista aetnensis
(Mount Etna broom)
Upright, deciduous tree or large shrub with weeping, bright green branches. Bears a profusion of fragrant, pealike, golden-yellow flowers in midsummer.



☼ 💧Z9–10

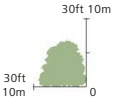
RED

***Malus* 'Veitch's Scarlet'**
Deciduous, spreading tree with ovate to elliptic, dark green leaves. Produces white flowers in late spring and crimson-flushed, scarlet crab apples in fall.



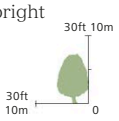
☼ 💧Z4–7

***Acer palmatum* 'Atropurpureum'**
Deciduous, bushy-headed shrub or small tree with deeply lobed, reddish-purple foliage that turns brilliant red in fall. Small, reddish-purple flowers are borne in midspring.



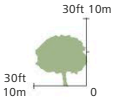
☼ 💧Z6–8

Photinia davidiana
Evergreen, spreading tree or large shrub with narrow, glossy, dark green leaves, older ones turning red in fall. Sprays of white flowers in early summer are followed by clusters of bright red fruits in fall.



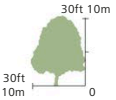
☀ ◐ Z7–9

***Malus* 'Cowichan'**
Deciduous, spreading tree. Has dark green foliage, reddish-purple when young. Pink flowers appear in midspring, followed by reddish-purple crabapples.

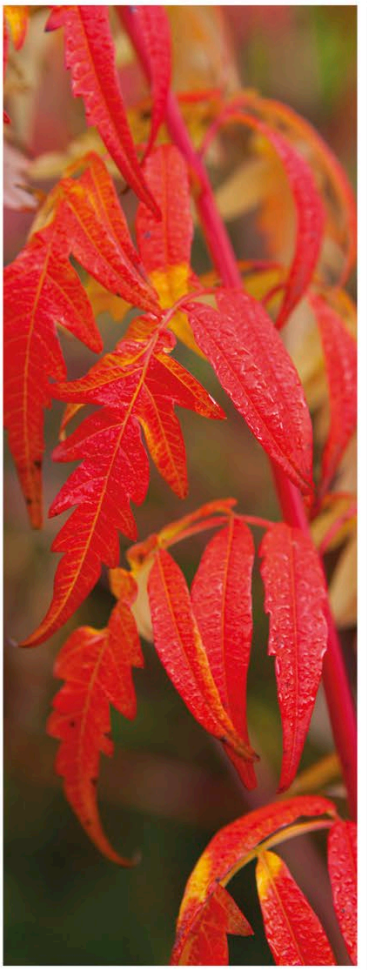


☀ ◐ Z5–9

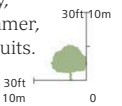
***Acer palmatum* 'Osakazuki'**
Deciduous, bushy-headed shrub or tree with large, 7-lobed, mid-green leaves that turn brilliant scarlet in fall. Clusters of small, reddish-purple flowers are borne in midspring.



☀ ◐ Z6–8

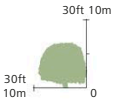


***Rhus* x *pulvinata* 'Red Autumn Lace'**
Deciduous, spreading, treelike shrub. Large, rich green leaves, with 11–13 oblong-lance-shaped leaflets, turn orange to red-purple in fall. Bears erect, conical panicles of tiny, yellow-green flowers in summer, then spherical, bristly, red fruits.



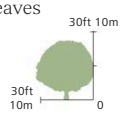
☀ ◐ Z4–7

***Acer japonicum* 'Aconitifolium'**
Deciduous, bushy tree or large shrub. Deeply divided, mid-green leaves turn red in fall. Reddish-purple flowers appear in midspring.



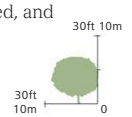
☀ ◐ Z5–7

Acer tataricum* subsp. *ginnala
(Amur maple)
Deciduous, spreading tree or large shrub. Clusters of fragrant, creamy-white flowers are borne in early summer amid dainty, bright green leaves that turn red in fall.



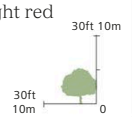
☀ ◐ Z3–7

***Rhus typhina* RADIENCE ('Sinrus')**
Deciduous spreading tree or large shrub with particularly elegant foliage, which emerges bright salmon-pink and matures to golden green, before turning brilliant shades of orange, red, and yellow in fall.



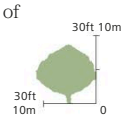
☀ ◐ Z3–8

Crataegus coccinea
Deciduous, spreading tree with sharply toothed, lobed, dark green leaves that turn orange and red in fall. White flowers with red anthers in late spring are followed by bright red fruits in fall.



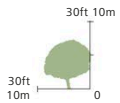
☀ ◐ Z6–8 !

Acer triflorum
Slow-growing, deciduous, spreading tree with peeling, gray-brown bark. Leaves, composed of 3 leaflets, are dark green, turning brilliant orange-red in fall. Clusters of tiny, yellow-green flowers appear in late spring.

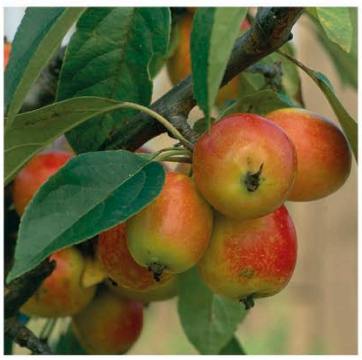


☼ 💧Z5–7

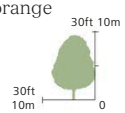
***Malus* 'Professor Sprenger'**
Deciduous, rounded, dense tree. Dark green leaves turn yellow in late fall. White flowers, pink in bud, open from mid- to late spring and are followed by orange-red crabapples in fall.



☼ 💧Z4–8



***Malus* 'John Downie'**
Deciduous tree, narrow and upright when young, conical when mature. White flowers, borne amid bright green foliage in late spring, are followed by large, edible, red-flushed, orange crabapples in fall.



☼ 💧Z5–8

SORBUS

Comprising more than 100 hardy species, *Sorbus* includes a wide range of ornamental trees ideal for small to medium-sized gardens. They provide year-round color and interest, with fragrant corymbs of cream flowers, attractive, divided foliage, vibrant fall color, and decorative berrylike fruits that last well into winter on some species. Most members of this genus fall into one of two categories: the Aucuparia group, which has pinnate leaves, like European mountain ash (*Sorbus aucuparia*), and the Aria group, which has rounded or ovate leaves, such as whitebeam (*Sorbus aria*). Virtually all species are easy to grow and thrive in full sun or dappled shade, and in well-drained, fertile, acidic or alkaline soil, although species within the Aucuparia group are not long-lived on shallow alkaline soils.

S. scalaris

S. aucuparia ⓘ

S. forrestii

S. cashmiriana ⓘ

S. commixta ⓘ

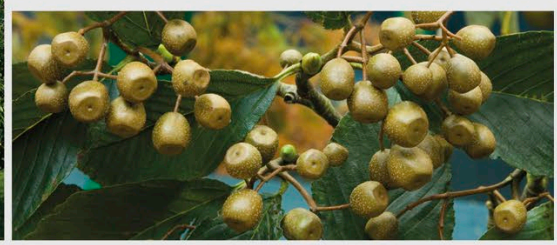
***S. thibetica* 'John Mitchell'** ⓘ

S. vilmorinii ⓘ

S. sargentiana

S. intermedia

***S. aria* 'Lutescens'** ⓘ

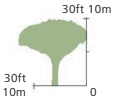


S. megalocarpa

FALL

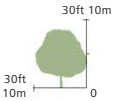
YELLOW

Acer laxiflorum
Deciduous, spreading tree with arching branches streaked with white and green. In late summer has pale red, winged fruits. Pointed, red-stalked, dark green leaves turn orange in fall.



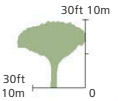
☼ 💧Z6–7

Picrasma quassioides (Quassia)
Deciduous, spreading tree with glossy, bright green leaves, composed of 9–13 leaflets, that turn brilliant yellow, orange, and red in fall.



☼ 💧Z6–9

***Malus* 'Butterball'**
Deciduous, spreading tree with ovate to heart-shaped, bright green leaves, gray-green when young. Pink-flushed white flowers are borne in late spring, followed by striking orange-yellow fruit, red-flushed at first.

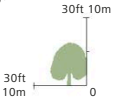


☼ 💧Z5–7

WINTER

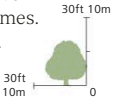
YELLOW

Acacia pravissima (Ovens wattle)
Evergreen, spreading, arching tree or shrub. Has triangular, spine-tipped, silver-gray phyllodes (flat, leaflike stalks) and small heads of bright yellow flowers in late winter or early spring.



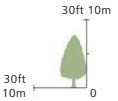
☼ 💧Z11

Acacia baileyana
Evergreen, spreading tree with divided, fernlike, 2-pinnate, silvery-gray or blue-gray leaves. From late winter to early spring, produces masses of spherical, golden-yellow flower heads in dense, axillary racemes. Is best grown against a wall.



☼ 💧Z10-11

***Ilex aquifolium* 'Amber'**
Evergreen, many-branched, conical, female tree with abundant, amber-yellow berries. Mid-green stems bear elliptic, usually entire, bright green leaves.

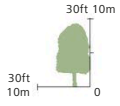


◑ 💧Z7–9

***Carpinus betulus* 'Fastigiata'**
Deciduous, erect tree, with a very distinctive flamelike outline that becomes more open with age. Ovate, prominently veined, dark green leaves turn yellow and orange in fall.

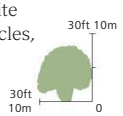
H7

***Pittosporum eugenioides* 'Variegatum'**
Evergreen, columnar tree. Wavy-edged, glossy, dark green leaves have white margins. Honey-scented, pale yellow flowers are borne in spring.



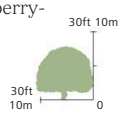
H3

***Aralia elata* 'Variegata'**
Deciduous tree or shrub with sparse, sturdy, prickly stems. Large, dark green leaves, with cream margins, are divided into numerous ovate, paired leaflets. Billowing heads of tiny, white flowers, forming large panicles, are borne in late summer.



H5

***Arbutus unedo* (Strawberry tree)**
Evergreen, spreading tree or shrub with rough, brown bark and glossy, deep green leaves. Pendent, urn-shaped, white flowers appear in fall–winter as previous season's strawberry-like, red fruits ripen.



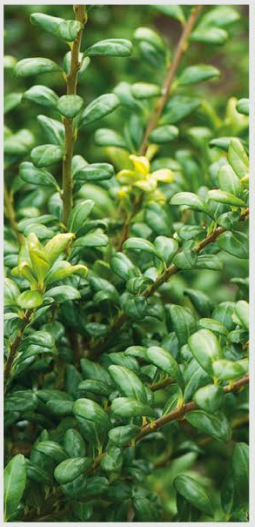
H5

HOLLIES

The common holly, *Ilex aquifolium*, is one of the best-known evergreen trees, but many other *Ilex* cultivars are attractive garden plants. In size they range from tall specimen trees to small shrubs. Leaves may be smooth-edged or spiny and vary in color, several having gold, yellow, cream, white, or gray variegation. Small, often white, male and female flowers, borne on separate plants during summer, are followed by red, yellow, or black berries. In almost all cases, hollies are unisexual—that is, the berries are borne on female plants—so to obtain fruits, it is usually necessary to grow plants of both sexes. When choosing a holly, don't rely on variety names to sex plants—*Ilex aquifolium* 'Silver Queen', for example, is male. Hollies respond well to pruning and many may be clipped to form hedges.

***I.* x *altaclerensis* 'Camelliifolia Variegata'** ⓘ

I. pernyi ⓘ



***I.* x *koehneana* 'Chestnut Leaf'**

***I. aquifolium* 'Silver Queen'** ⓘ

***I. aquifolium* 'Madame Briot'** ⓘ

***I. crenata* 'Convexa'** ⓘ

***I. aquifolium* 'Argentea Marginata'** ⓘ

***I. aquifolium* 'Silver Milkmaid'** ⓘ

***I.* x *altaclerensis* 'Belgica Aurea'** ⓘ

***I. aquifolium* 'Ferox Argentea'**

***I.* x *altaclerensis* 'Balearica'** ⓘ

I. x *meserveae* BLUE PRINCESS **('Conapri')** ⓘ

***I. aquifolium* 'Pyramidalis Aureomarginata'** ⓘ

***I.* x *altaclerensis* 'Golden King'**

***I. aquifolium* 'Golden Milkboy'** ⓘ

I. aquifolium ⓘ

I. verticillata ⓘ

***I.* x *altaclerensis* 'Camelliifolia'** ⓘ

***I. aquifolium* 'Bacciflava'**

BLUE

Cedrus atlantica* f. *glauca
(Blue Atlas cedar)
Conical conifer with silvery-blue foliage that is very bright, especially in spring. Erect, cylindrical cones are produced in fall. Is widely planted as a specimen tree.

Cupressus cashmeriana
(Kashmir cypress)
Handsome, broadly conical conifer, spreading with age, with aromatic foliage borne in pendent, flat, glaucous blue sprays. Bears small, globose, dark brown mature cones.

Pinus ayacahuite
(Mexican white pine)
Spreading conifer with weeping leaves made up of lax, blue-green needles, to 6in (16cm) long, in bundles of 5. Pendent cones are often covered with sticky, white resin and may grow 10in (25cm) long.

***Abies concolor* 'Argentea'**
Conical conifer with silvery foliage that contrasts well with dark gray bark. Oblong to ovoid, pale blue or green cones are 3–5in (8–12cm) long.

Pinus* x *holfordiana (Holford pine)
Broadly conical, open conifer with large cones, brown when ripe. Pendent, glaucous blue-green leaves are held in clusters of 5.

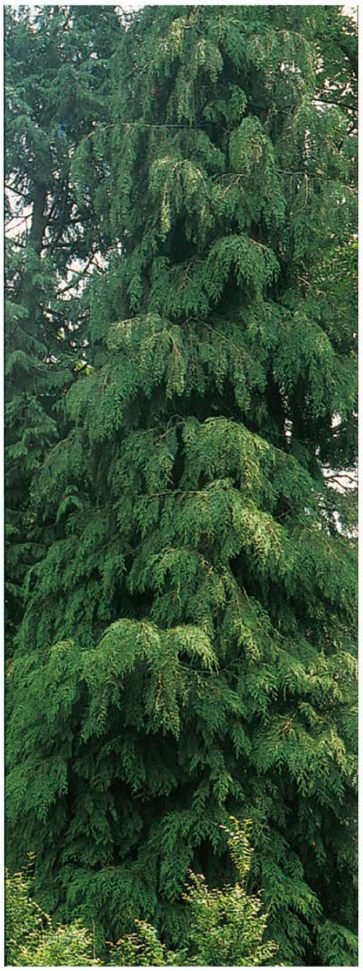
SILVER

Abies procera (Noble fir)
Narrowly conical conifer with smooth, silvery-gray bark and gray-green or bright blue-gray leaves. Produces sturdy, cylindrical, green cones, 6–10in (15–25cm) long, that ripen to brown.

x *Cuprocyparis leylandii* 'Haggerston Grey'
Vigorous, upright, columnar conifer, tapering at the apex. Has smooth bark, becoming stringy with age, flat sprays of pointed, gray-green leaves, and dark brown female cones. A popular screening plant.

Pinus peuce (Macedonian pine)
Upright conifer, forming a slender pyramid. Has dense, gray-green foliage and cylindrical, green cones with white resin that ripen brown in fall. Is an attractive tree that grows consistently well in all sites.

GREEN



***Chamaecyparis lawsoniana* 'Intertexta'**
Elegant, weeping conifer with aromatic, gray-green foliage carried in lax, pendulous sprays. Old trees become columnar with some splayed branches.

100ft 30m
75ft 22.5m 0

☼ ◑ Z5–9 ⓘ

Wollemia nobilis (Wollemi pine)
Erect, bushy conifer with narrowly oblong, pointed, needlelike, dark green leaves, and "bubbly," brown bark when mature. In winter, shoot tips are covered in a protective white resin. Catkinlike female cones are borne on shoot tips.

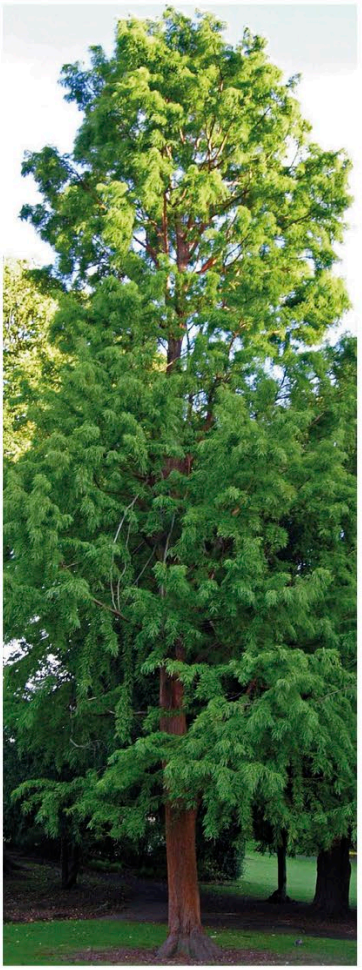
100ft 30m
75ft 22.5m 0

☼ ◑ Z7–11

Pinus strobus
(Eastern white pine)
Conifer with an open, sparse, whorled crown. Has gray-green foliage and cylindrical cones. Smooth, gray bark becomes fissured with age. Does not tolerate pollution.

100ft 30m
75ft 22.5m 0

☼ ◑ Z4–9



Metasequoia glyptostroboides
(Dawn redwood)
Fast-growing, deciduous, upright conifer with fibrous, reddish bark. Soft, blue-green leaves turn yellow, pink and red in fall. Cones are globose to ovoid, ¾in (2cm) long.

100ft 30m
75ft 22.5m 0

☼ ● Z5–10

Pseudotsuga menziesii* var. *glauca
(Blue Douglas fir)
Fast-growing, conical conifer with thick, grooved, corky, gray-brown bark, aromatic, glaucous blue-green leaves, and sharply pointed buds. Cones have projecting, 3-pronged bracts.

100ft 30m
75ft 22.5m 0

☼ ◑ Z4–7

Pinus coulteri
(Big-cone pine, Coulter pine)
Fast-growing conifer with large, broadly ovoid, prickly cones, each 2–4½lb (1–2kg). Gray-green leaves in crowded clusters are sparsely set on branches. Grows in all soils, even heavy clay.

100ft 30m
75ft 22.5m 0

☼ ● Z8–9

Cedrus deodara (Deodar cedar)
Fast-growing conifer, densely conical with weeping tips when young, broader when mature. Has spirally arranged, needlelike, gray-green leaves and barrel-shaped, glaucous cones, 3–5in (8–12cm) long, ripening to brown.

100ft 30m
75ft 22.5m 0

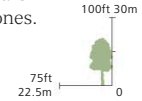
☼ ◑ Z6–9

Abies veitchii (Veitch fir)
Fast-growing, conical, upright conifer with soft, densely arranged, dark green leaves, which curve upward and are silvery beneath. Produces cylindrical, bright gray-blue cones.

100ft 30m
75ft 22.5m 0

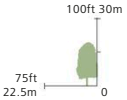
☼ ◑ Z3–6

Pinus ponderosa
(Ponderosa pine, western yellow pine)
Conical or upright conifer, grown for its distinctive, deeply fissured bark, with smooth, brown plates, and bold grayish-green foliage. Bears ovoid, purplish-brown cones.



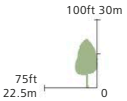
☼ ◖ Z5–8

Pinus muricata (Bishop pine)
Fast-growing, often flat-topped conifer. Leaves are blue- or gray-green and held in pairs. Ovoid cones, 3–3½in (7–9cm) long, rarely open. Does particularly well in poor, sandy soil.

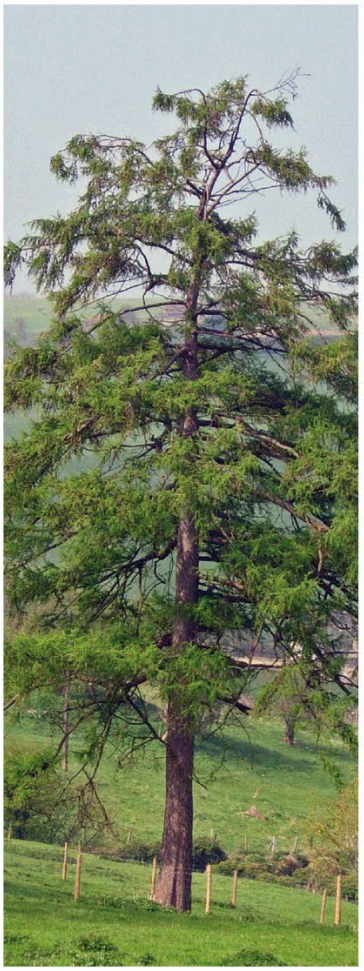


☼ ◊ Z7–9

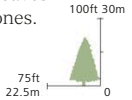
Pinus jeffreyi (Black pine, Jeffrey pine)
Upright, narrow-crowned conifer with sturdy, gray-green leaves, 5–10in (12–26cm) long. Bark is black with fine, deep fissures and shoots have an attractive, grayish bloom.



☼ ◊ Z6–8

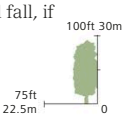


Larix decidua (European larch)
Fast-growing, deciduous conifer with a conical crown when young, broadening on maturity, and spaced branches. Shoots are yellow-brown in winter. Has light green leaves and small, erect, conical cones.



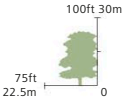
☼ ◊ Z3–6

Ginkgo biloba (Maidenhair tree)
Long-lived, deciduous conifer, upright when young, spreading with age. Has fan-shaped, 5in- (12cm-) long, bright green leaves. Bears fruits with edible kernels in late summer and fall, if male and female plants are grown together.



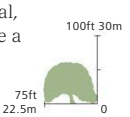
☼ ◊ Z5–9

Cedrus libani (Cedar of Lebanon)
Spreading conifer, usually with several arching stems. Branches carry flat layers of dark gray-green foliage and oblong to ovoid, grayish-pink cones, 3–6in (8–15cm) long.



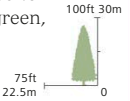
☼ ◖ Z6–9

Pinus patula (Mexican weeping pine)
Rounded to broadly spreading conifer with scaling, ocher-colored bark. Weeping shoots bear narrow, bright green leaves, to 12in (30cm) long, in clusters of 3–5. Long-conical, chestnut-brown cones have a prickle on each scale.



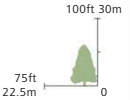
☼ ◊ Z8–9

Sequoia sempervirens (Coast redwood)
Very vigorous, columnar to conical conifer with horizontal branches. Has soft, fibrous, red-brown bark and needle-like, flattened, pale green leaves, spirally arranged. Produces rounded to cylindrical cones, initially green, ripening to dark brown.



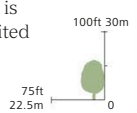
☼ ◊ Z8–9

Pinus wallichiana
(Bhutan pine, Himalayan pine)
Conical conifer with long, drooping, blue-green leaves in 5s. Has smooth bark, gray-green on young trees, later fissured and dark, and cylindrical cones.



☼ ◊ Z6–9

Pinus pinaster
(Cluster pine, maritime pine)
Vigorous, domed conifer with a long, branchless trunk. Has gray-green leaves and whorls of rich brown cones. Purple-brown bark is deeply fissured. Is well-suited to dry, sandy soil.



☼ ◊ Z8–10

GREEN

Picea abies
(Common spruce, Norway spruce)
Fast-growing, pyramidal conifer with dark green leaves. Narrow, pendulous, glossy, brown cones are 4–8in (10–20cm) long. Much used as a Christmas tree but less useful as an ornamental.

Pinus nigra* subsp. *nigra
(Austrian pine)
Broadly crowned conifer, with well-spaced branches, often with several stems. Paired, dark green leaves are densely tufted. Tolerates an exposed site.

Araucaria araucana
(Chile pine, monkey puzzle)
Open, spreading conifer with gray bark, wrinkled like elephant hide. Has flattened and sharp, glossy, dark green leaves and 6in- (15cm-) long cones. Makes a fine specimen tree.

Picea omorika (Serbian spruce)
Narrow, conical conifer, resembling a church spire, with dark green leaves that are white below. Branches are pendulous and arch out at tips. Violet-purple cones age to glossy brown. Grows steadily in all soils.

Pinus radiata (Monterey pine)
Very fast-growing conifer, conical when young, domed when mature. Black bark contrasts well with soft, bright green leaves. Makes an excellent windbreak.

Sequoiadendron giganteum
(Giant redwood, Wellingtonia)
Very fast-growing, conical conifer. Has thick, fibrous, red-brown bark and sharp, bluish-green leaves. Is one of the world's largest trees when mature.

Abies grandis (Giant fir, grand fir)
Very vigorous, narrow, conical conifer with a neat habit. Dark green leaves have an orange aroma when crushed. Cones, 3in (7–8cm) long, ripen red-brown. Makes a useful specimen tree.

Pinus heldreichii (Bosnian pine)
Dense, conical conifer with scaly, ash-gray bark and pairs of dark green leaves. Ovoid cones, 2–4in (5–10cm) long, are cobalt-blue in early summer, ripening to brown.

Z3–8 | 100ft 30m | 75ft 22.5m | 0

Z5–8 | 100ft 30m | 75ft 22.5m | 0

Z7–11 | 100ft 30m | 75ft 22.5m | 0

Z7–9 | 100ft 30m | 75ft 22.5m | 0

Z4–8 | 100ft 30m | 75ft 22.5m | 0

Z5–6 | 100ft 30m | 75ft 22.5m | 0

Z6–9 | 100ft 30m | 75ft 22.5m | 0

Z4–8 | 100ft 30m | 75ft 22.5m | 0

GREEN/YELLOW

x *Cuprocyparis leylandii* 'Castlewellan'
Upright, vigorous conifer, slightly slower-growing than its parents. Produces attractive, bronze-yellow foliage.

100ft 30m
75ft 22.5m
0

☼ ◊ Z6–9 ⓘ

***Picea orientalis* 'Skylands'**
Dense, upright, graceful conifer with short, glossy leaves that retain their creamy-gold color throughout the year. Narrowly oblong cones are dark purple, males turning brick-red in spring.

100ft 30m
75ft 22.5m
0

☼ ◊ Z5–8

Taxodium distichum
(Bald cypress, swamp cypress)
Deciduous, broadly conical conifer with small, globose to ovoid cones. Yewlike, fresh green leaves turn rich brown in late fall. Grows in a very wet site, producing special breathing roots.

100ft 30m
75ft 22.5m
0

☼ ◊ Z5–11

BLUE

Picea engelmannii
(Engelmann spruce, mountain spruce)
Broadly conical conifer. Leaves encircle shoots and are prickly or soft, lush, glaucous or bluish-green. Bears small, cylindrical cones. Good for a very poor site.

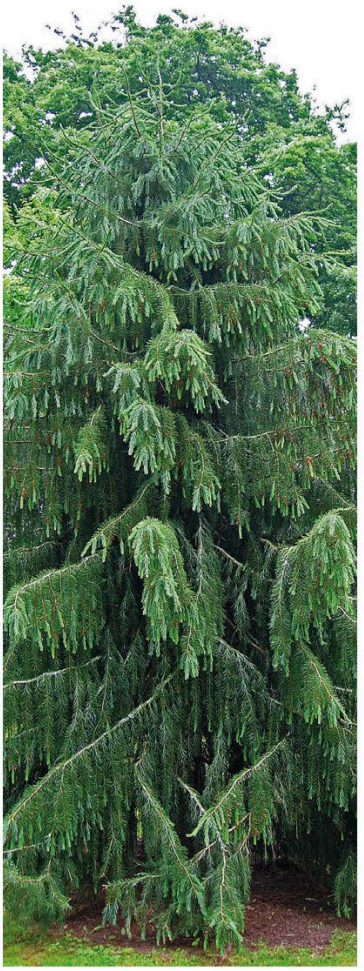
50ft 15m
50ft 15m
0

☼ ◊ Z3–8

***Picea glauca* 'Coerulea'**
Dense, upright, conical conifer with needlelike, blue-green to silver leaves and ovoid, light brown cones.

50ft 15m
50ft 15m
0

☼ ◊ Z2–6



Picea breweriana (Brewer's spruce)
Upright conifer with level branches and completely pendulous branchlets, to 6ft (2m) long. Leaves are sturdy and blue-green. Bears oblong, purplish cones, 2½–3in (6–8cm) long.

50ft 15m
50ft 15m
0

☼ ◊ Z6–8

***Picea pungens* 'Koster'**
Upright conifer with whorled branches. Has scaly, gray bark and attractive, needlelike, glaucous, silvery-blue leaves, which fade to green with age. Tends to suffer from aphid attack.

50ft 15m
50ft 15m
0

☼ ◊ Z2–8

***Chamaecyparis lawsoniana* 'Pembury Blue'**
Magnificent, conical conifer producing aromatic, pendent sprays of gray-blue foliage.

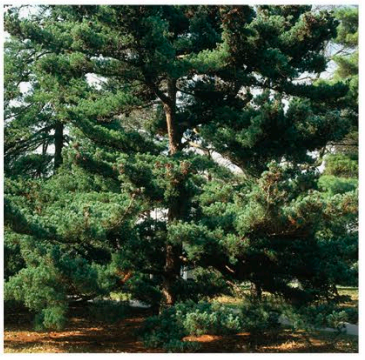
50ft 15m
50ft 15m
0

☼ ◊ Z5–9 ⓘ

***Tsuga mertensiana* 'Glauca'**
Slow-growing, dwarf or medium-sized, columnar-conical conifer with red-brown shoots bearing spirally arranged, needlelike, flattened, glaucous, silver-gray leaves. Cones are yellow-green to purple, ripening to dark brown.

50ft 15m
50ft 15m
0

☼ ◊ Z6–8



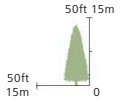
Pinus parviflora
(Japanese white pine)
Slow-growing, conical or spreading conifer with purplish-brown bark and fine, deep green leaves, bluish-white on the inner surface. Leaves are held in groups of 5. Bears ovoid cones, 2–4in (5–10cm) long.

50ft 15m
50ft 15m
0

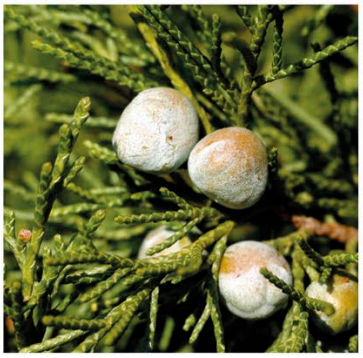
☼ ◊ Z6–9

GREEN

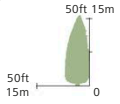
Abies forrestii (Forrest fir)
Conical conifer with an open, whorled habit and smooth, silvery-gray bark. Shoots are red-brown, with spherical, white buds. Has dark green leaves, silvery-white beneath, and ovoid-cylindrical, violet-blue cones.



☀ ◑ Z5–6

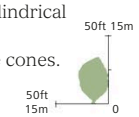


Juniperus chinensis **'Keteleeri'**
Dense, regular, slender, narrowly conical conifer with scalelike, aromatic, dark gray-green leaves and peeling, brown bark. Makes a reliable, free-fruiting form for formal use.

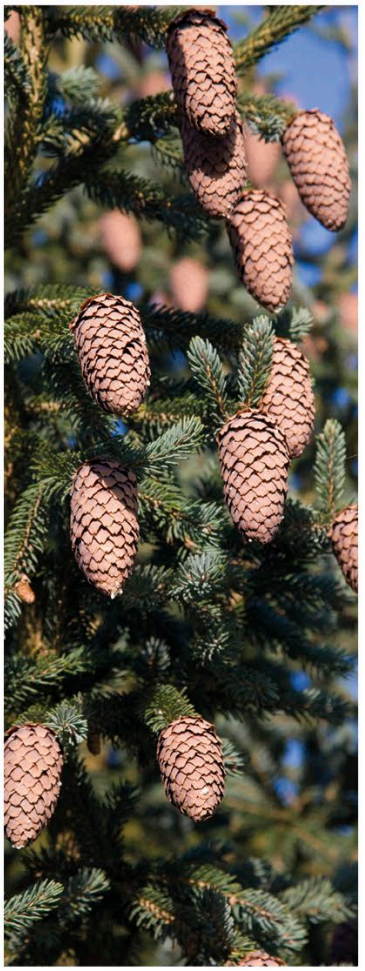


☀ ◑ Z3–9

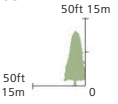
Fitzroya cupressoides
(Patagonian cypress)
Conical conifer or spreading, coniferous shrub with red-brown bark that peels in strips, and oblong, dark green leaves, to ¼in (5mm) long. Bears cylindrical male cones and solitary, spherical, terminal female cones.



☀ ◑ Z8–9

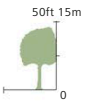


Picea likiangensis (Lijiang spruce)
Upright conifer with well-spaced, bluish-green leaves. Cones, 3–6in (8–15cm) long, are cylindrical; female cones are bright reddish-purple when young, ripening to purple; male cones are pink.



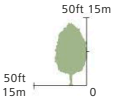
☀ ◑ Z4–8

Pinus thunbergii
(Japanese black pine)
Rounded conifer, conical when young, with dark green leaves and green-brown cones, 1½–2½in (4–6cm) long. Buds are covered with silky, white scales. Tolerates salt spray well.



☀ ◑ Z5–8

Pinus rigida (Northern pitch pine)
Conical conifer, often with sucker shoots from trunk. Twisted, dark green leaves are borne in 3s. Ovoid to globose, red-brown cones, 1¼–3in (3–8cm) long, persist, open, on the tree.

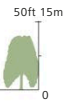


☀ ◑ Z4–7

Podocarpus salignus
Columnar or broadly conical tree with spreading, later pendent, branches and peeling red-brown bark. Spreading, linear or sickle-shaped leaves are dark blue-green, yellow-green beneath. Male cones are yellow, catkinlike; female cones are green.

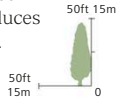
☀ ◑ Z7–10

Juniperus recurva **var. *coxii***
(Coffin juniper)
Slow-growing, conical conifer with smooth bark that flakes in thin sheets. Pendant sprays of long, needlelike, aromatic, incurved leaves are bright green. Globose or ovoid, fleshy berries are black.



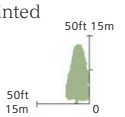
☀ ◑ Z7–11

Austrocedrus chilensis
(Chilean incense cedar)
Narrowly columnar, densely branched tree with dark brown to orange-gray bark. Scalelike, grayish-green leaves, to ¼in (5mm) long, are arranged in sets of 2 unequal pairs. Produces ovoid-oblong, brown cones.



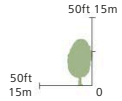
☀ ◑ Z7–10

Cunninghamia lanceolata
(Chinese fir)
Upright conifer, mop-headed on a dry site, with distinctive, thick and deeply furrowed, red-brown bark. Glossy, green leaves are sharply pointed and lance-shaped.



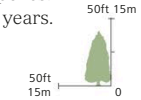
☀ ◑ Z7–9

Phyllocladus trichomanoides
Slow-growing conifer, conical when young, developing a more rounded top with age. Leaflike, deep green, modified shoots, 4–6in (10–15cm) long, have 5–10 lobed segments.



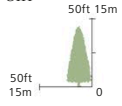
☀ ◑ Z8–11

Sciadopitys verticillata
(Japanese umbrella pine)
Conical conifer with reddish-brown bark. Deep green leaves, yellowish beneath, are whorled at the ends of shoots, like umbrella spokes. Ovoid cones ripen over 2 years.



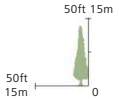
☀ ◑ Z5–9

Picea morrisonicola (Taiwan spruce)
Upright, conical conifer, becoming columnar with age. Needlelike, deep green leaves are pressed down on slender, pale brown shoots. Cones are cylindrical and 2–3in (5–7cm) long.



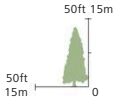
☀ ◑ Z7–9

Calocedrus decurrens (Incense cedar)
Upright conifer with short, horizontal branches and flaky, gray bark, brown beneath. Has flat sprays of aromatic, dark green leaves. Resists honey fungus.



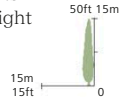
☀ ◑ Z5–8

Pinus cembra (Arolla pine)
Dense, conical conifer with dark green or bluish-green leaves grouped in 5s. Ovoid, bluish or purplish cones, 2½– 3in (6–8cm) long, ripen brown.

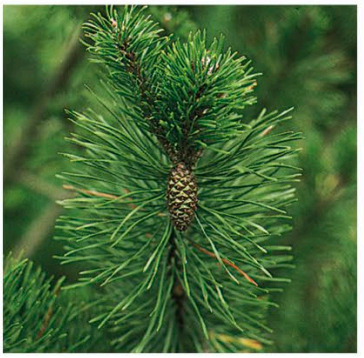


☀ ◑ Z3–7

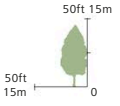
***Taxus baccata* 'Fastigiata'** (Irish yew)
Slow-growing conifer with a broadly conical, later domed crown. Erect branches bear needlelike, flattened, dark green leaves that stand out all around shoots. Female plants bear cup-shaped, fleshy, bright red fruits.



☀ ◑ Z7–8 ⓘ

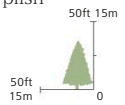


Pinus contorta* var. *latifolia
(Lodgepole pine)
Conical conifer with bright green leaves, 2½–4in (6–9cm) long. Small, oval cones remain closed on the tree. Is suitable for a wet or coastal site.



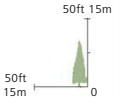
☀ ◑ Z6–8

Torreya californica
(California nutmeg)
Upright, conical conifer with very prickly, glossy, dark green leaves, yellowish-green beneath, similar to those of yew. Cones are purplish-green and olivelike.



☀ ◑ Z7–11

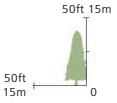
Chamaecyparis thyoides
(White cypress)
Upright conifer with aromatic, green or blue-gray leaves in rather erratic, fan-shaped sprays on very fine shoots. Cones are small, round, and glaucous blue-gray.



☀ ◑ Z3–8 ⓘ

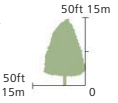
GREEN

Pinus banksiana (Jack pine)
Slender, conical conifer with fresh green leaves in twisted, divergent pairs. Curved cones, 1¼–2½in (3–6cm) long, point forward along shoots.

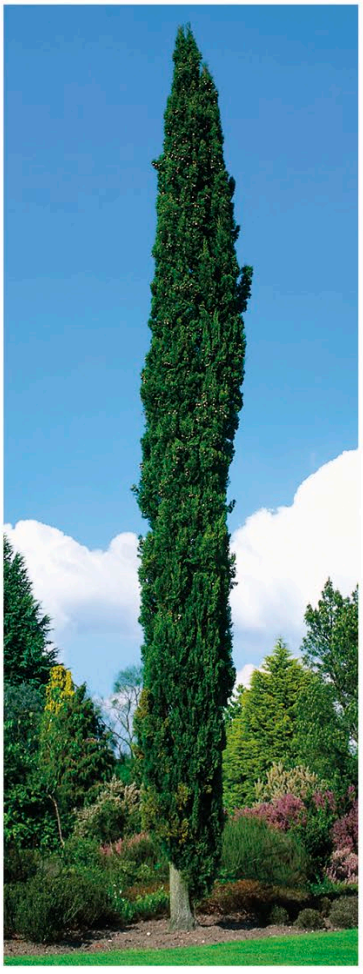


☼ ◊ Z3–8

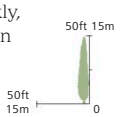
Tsuga canadensis
(Canada hemlock, eastern hemlock)
Broadly conical conifer, often with several stems. Gray, hairy shoots have 2-ranked, dark green leaves, often inverted to show their silver undersides. Cones are ovoid and light brown.



☀ ◑ Z4–8

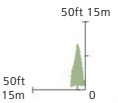


Cupressus sempervirens **'Stricta'**
(Italian cypress)
Narrow, columnar conifer with upward-sweeping branches. Has fissured bark and scalelike, deep green leaves. Bears globular, prickly, woody, brown cones, to 1¼in (3cm) across.



☼ ◊ Z7–9

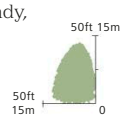
Chamaecyparis lawsoniana
'Green Pillar'
Conical conifer with upright branches. Aromatic foliage is bright green and becomes tinged with gold in spring. Is suitable for hedging as it requires little clipping.



☼ ◑ Z5–9 !

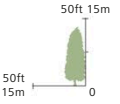
YELLOW

Pinus contorta
(Beach pine, shore pine)
Dense, conical or domed conifer. Has paired, bright green leaves and conical to ovoid cones, 1¼–3in (3–8cm) long. Is well-suited to a windy, barren site and tolerates waterlogged ground.

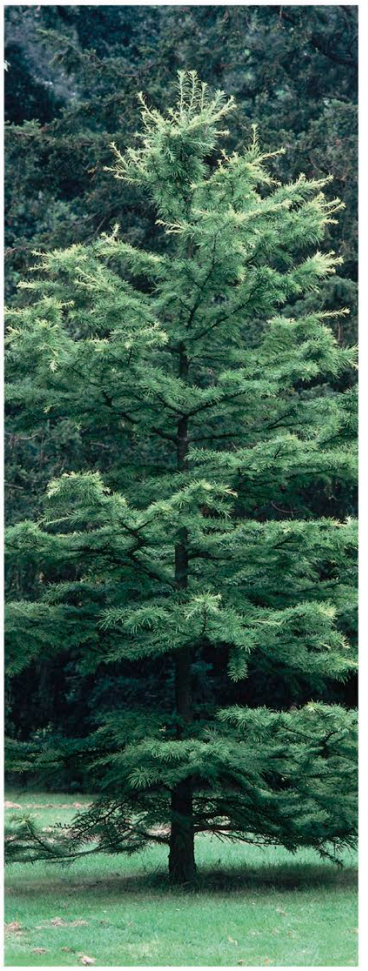


☼ ◑ Z6–8

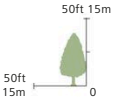
Chamaecyparis lawsoniana
'Lanei Aurea'
Upright conifer that forms a neat column of aromatic, golden-yellow-tipped foliage.



☼ ◑ Z5–9 !

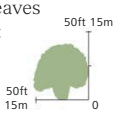


Pseudolarix amabilis (Golden larch)
Deciduous, open-crowned conifer, slow-growing when young. Has clusters of linear, fresh green leaves, 1–2½in (2.5–6cm) long, which gradually turn bright orange-gold in fall.



☼ ◑ Z5–9

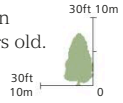
Taxus baccata **'Lutea'**
(Yellow-berried yew)
Slow-growing conifer grown for its fleshy, bright golden-yellow fruits. These look particularly striking against the needlelike, dark green leaves and are often borne in great profusion in fall.



☀ ◊ Z7–8 !

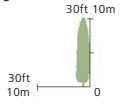
GREEN

Pinus aristata (Bristlecone pine)
Slow-growing, bushy conifer. Leaves are in bundles of 5, very dense and blue-white to gray-green, flecked with white resin. Ovoid cones, 1½–4in (4–10cm) long, have bristly prickles. Is the oldest known living plant, over 4,000 years old.



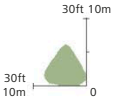
☼ ◊ Z2–10

Chamaecyparis lawsoniana **'Columnaris'**
Narrow, upright conifer that forms a neat column of aromatic, blue-gray foliage. Will tolerate poor soil and some clipping. Is an effective small specimen tree.



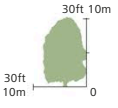
☼ ◊ Z5–9 ⓘ

Picea mariana **'Doumetii'**
Densely branched, globose or broadly conical conifer with short, needlelike, silvered, dark green leaves and pendulous, ovoid, purplish cones.

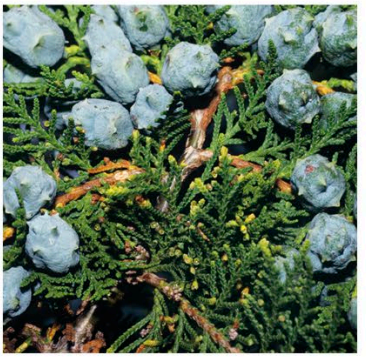


☼ ◊ Z2–6

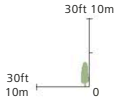
Juniperus recurva (Drooping juniper, Himalayan weeping juniper)
Slow-growing, conical conifer with aromatic, incurved, gray- or blue-green leaves and fleshy, black berries. Smooth bark flakes in thin sheets.



☼ ◊ Z7–11

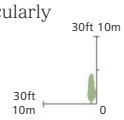


Juniperus chinensis **'Robust Green'**
Slow-growing, narrow, columnar conifer, growing only 3in (7–8cm) a year, with aromatic, blue-green foliage and small, gray-green juniper berries.



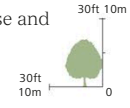
☼ ◊ Z3–9

Juniperus chinensis **'Obelisk'**
Slender, irregularly columnar conifer. Has ascending branches and long, prickly, needlelike, aromatic, dark green leaves. Tolerates a wide range of soils and conditions but is particularly suitable for a hot, dry site.



☼ ◊ Z3–9

Pinus cembroides
(Mexican stone pine, pinyon)
Slow-growing, bushy conifer, rarely more than 20–22ft (6–7m) high. Scaly bark is a striking silver-gray or grayish-brown. Leaves, in clusters of 2 or 3, are sparse and dark green to gray-green.

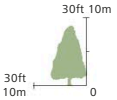


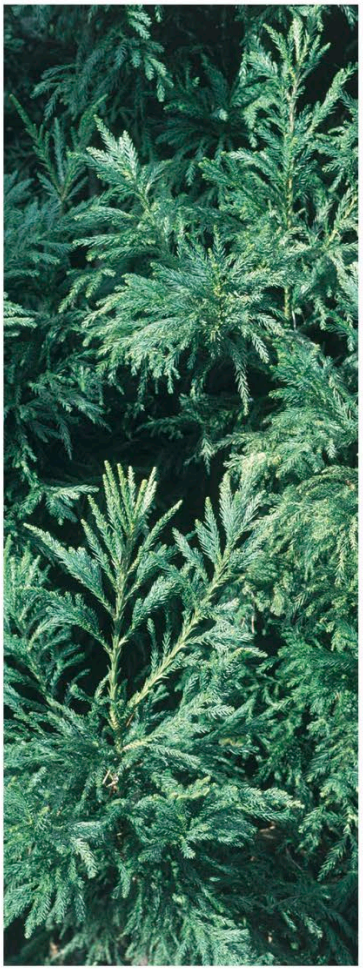
☼ ◊ Z5–8

GREEN

Abies koreana (Korean fir)
Broadly conical conifer. Produces cylindrical, violet-blue cones when less than 3ft (1m) tall. Leaves are dark green above, silver beneath.

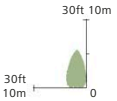
☀ ◑ Z5–7

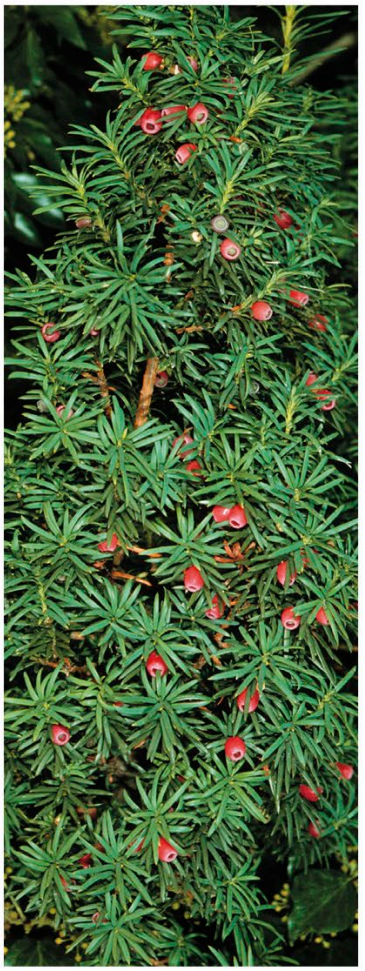




Cryptomeria japonica **'Cristata'**
Conical conifer with twisted, curved shoots and soft, fibrous bark. Foliage is bright green, aging brown.

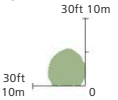
☀ ◑ Z6–9





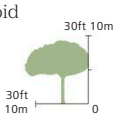
Taxus cuspidata (Japanese yew)
Evergreen, spreading conifer. Leaves are dark green above, yellowish-green beneath, sometimes becoming tinged red-brown in cold weather. Tolerates very dry and shady conditions.

☀ ◑ Z5–7 ⓘ



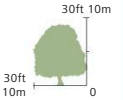
Pinus pinea
(Stone pine, umbrella pine)
Conifer with a rounded crown on a short trunk. Leaves are dark green, but blue-green, juvenile foliage is retained on young trees. Broadly ovoid cones ripen shiny brown; seeds are edible.

☀ ◑ Z9–11



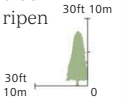
Cryptomeria japonica **'Pyramidata'**
Narrowly columnar or obelisk-shaped conifer. Foliage is blue-green when young, maturing to dark green.

☀ ◑ Z6–9



Pinus sylvestris **'Aurea'**
Upright conifer that develops a rounded crown with age. Bark is flaking and red-brown on upper trunk, fissured and purple-gray at base. Golden leaves in winter–spring, otherwise blue-green. Conical, green cones ripen to pale gray- or red-brown.

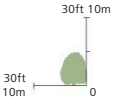
☀ ◑ Z3–7



YELLOW

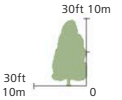
Cedrus deodara **'Aurea'**
Slow-growing, upright conifer with pendent branch tips and golden-yellow leaves when young in spring–summer. Foliage matures to yellowish-green. Makes a dramatic small-garden evergreen.

☀ ◑ Z6–9



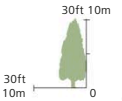
Chamaecyparis obtusa **'Crippsii'**
Attractive, small-garden, conical conifer, grown for its flattened sprays of aromatic, bright golden foliage. Bark is stringy and red-brown. Cones are round, ½in (1cm) across, and brown.

☀ ◑ Z4–8 ⓘ



Cupressus macrocarpa **'Goldcrest'**
Fast-growing, conical conifer with aromatic, golden-yellow foliage held in plumelike sprays that are useful in flower arrangements. Dislikes clipping.

☀ ◑ Z7–11



DWARF CONIFERS

Dwarf conifers are valuable plants, especially for the small garden, requiring little attention and providing year-round interest. They can be planted as features in their own right, for their varied shapes, habits and often striking colors, or, in a rock garden, to provide scale or act as a foil for other plants such as bulbs. Several species and cultivars are spreaders and good for groundcover. Most conifers are suited to a wide range of growing conditions, although *Cedrus* and *Juniperus* do not tolerate shade, and *Juniperus* and *Pinus* are best for dry, sandy soils. Some species may be clipped to form a low hedge, but new growth seldom occurs from wood more than 3 or 4 years old. Dwarf conifers also make excellent container plants.

Thuja plicata **'Stoneham Gold'**

Pinus heldreichii **'Smidtii'**

Picea pungens **'Globosa'**

Abies cephalonica **'Meyer's Dwarf'**

Podocarpus nivalis

Picea abies **'Ohlendorffii'**

Juniperus **x** ***pfitzeriana*** **'Old Gold'**

Juniperus squamata **'Blue Carpet'**

Taxus baccata **'Dovastonii Aurea'** ⓘ

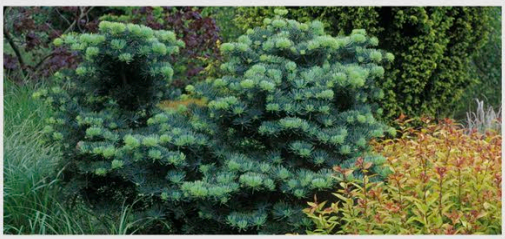
Juniperus scopulorum **'Skyrocket'**

Microbiota decussata

Platycladus orientalis **'Aurea Nana'** ⓘ

Pinus mugo **'Mops'**

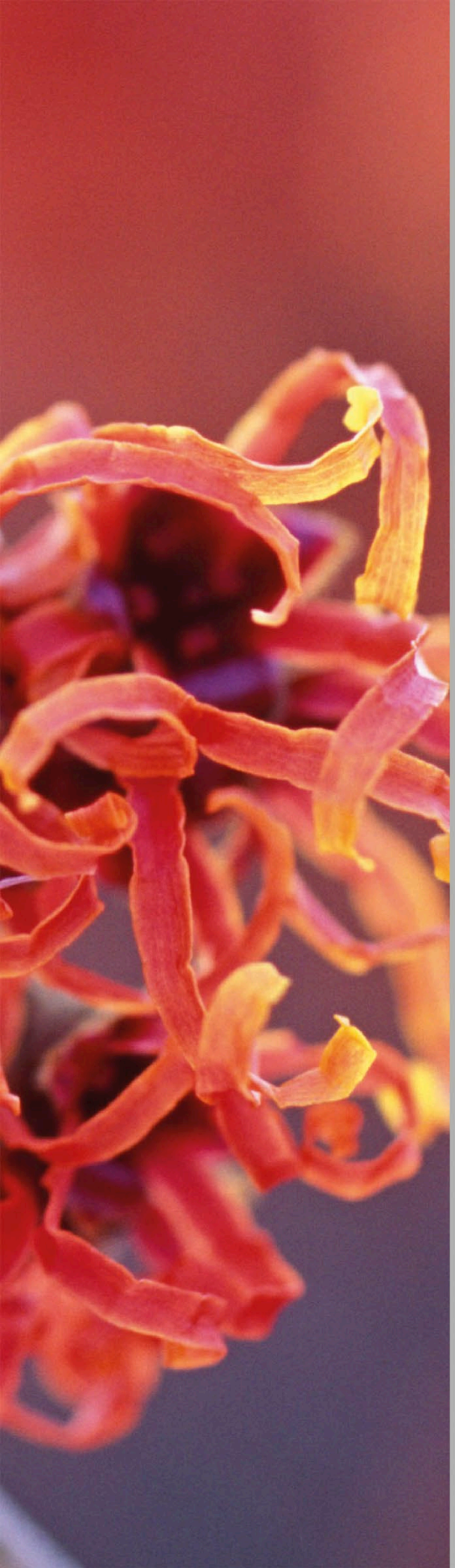
Juniperus squamata **'Holger'**

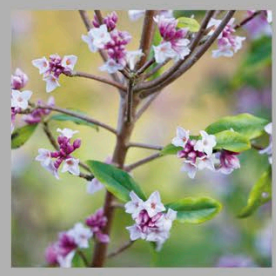


Abies concolor **'Compacta'**

Chamaecyparis obtusa **'Nana Gracilis'**

Chamaecyparis pisifera **'Filifera Aurea'**





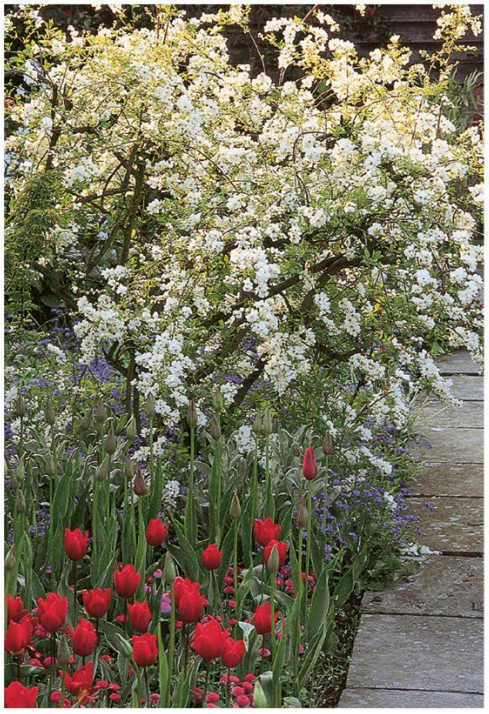
SHRUBS

Shrubs are key to any planting design, and provide color and interest throughout the seasons with their wide variety of foliage, flowers, fruits, and stems. Create a year-round display with a selection of beautiful spring- and summer-flowering shrubs, such as weigelas, buddlejas, and philadelphus, together with those that sport brightly colored fall fruits, such as pyracanthas and cotoneasters. You can then include witch hazels and some species of honeysuckle to brighten bleak winter months with their fragrant flowers. Whatever the size or style of your garden, the permanent woody structure of shrubs will form the framework, so make your selection and plant them before the perennials. Some shrubs are also ideal plants for hedges, enclosures, and screens.

SHRUBS

Star performers, shrubs form the backbone of many garden designs. They can be used together in shrub borders or with other plant groups in mixed displays. Providing color and interest with their foliage, flowers and fruits, many also offer scented blooms and colorful stems.

SIZE CATEGORIES USED WITHIN THIS GROUP		
Large over 10ft (3m)	Medium 5–10ft (1.5–3m)	Small up to 5ft (1.5m)



ABOVE Spring color
The flowering stems of *Exochorda* x *macrantha* 'The Bride' arch gracefully above forget-me-nots (*Myosotis sylvatica*), English daisies (*Bellis perennis*) and *Tulipa* 'Couleur Cardinal'.

What are shrubs?

Shrubs are woody-stemmed, deciduous or evergreen plants that branch out at or near ground level. Some can grow to more than 20ft (6m) in height, although most attain less than half this size. Leaves come in many forms, from large and glossy to gray and needlelike. There is sometimes an overlap between shrubs and trees because larger shrubs, such as flowering dogwoods (*Cornus* species), can be grown on a single stem. Subshrubs are another anomaly, with woody stems at the base, but softer top growth that may die back over winter in colder regions like a perennial. Examples include ceratostigmas and fuchsias.

Choosing shrubs

When selecting shrubs, focus on those whose needs match your garden conditions. In general, shrubs with large, dark green leaves require shade; plants with gray foliage, such as lavender, require sun; and shrubs with colorful leaves need full sun or partial shade. Also consider the shrub's size and site it where it has space to mature, unless you are planning a topiary display.

Designing with shrubs

When creating a shrub display, try to combine plants with different shapes, habits, flower seasons, and foliage forms and patterns to create a visually balanced scheme and year-round interest. Knit them together in a shrub bed, or use them to provide a backdrop to more transient displays of bulbs, perennials, and annuals in a mixed border.

The shape and habit of shrubs provides a design with structure and form. Contrast low, spreading, prostrate or mat-forming shrubs, such as *Juniperus procumbens* and *Cotoneaster horizontalis*, with more upright forms, such as *Rosmarinus officinalis* 'Miss Jessopp's Upright', and the rounded shapes of bushy shrubs like hebes, skimmias, or boxwood topiary. Mix in shrubs with tiered branch structures, such as *Viburnum plicatum* 'Mariesii', which provide strong horizontal lines in a scheme. Graceful, arching shrubs, such as *Kolkwitzia amabilis*, *Buddleja alternifolia* and *Genista tenera* 'Golden Shower' add an elegant note.

A wide range of shrubs are suitable for creating hedges, enclosures, or screens.

RENOVATING A SHRUB

When evergreens such as mahonias have outgrown their allotted space, many can be cut back hard from midwinter to early spring after flowering. The plant may not flower for two years after such drastic pruning, but its overall appearance will be much improved. Other shrubs that respond well to this form of renovation include buddlejas, forsythias, kerrias, and smoke trees (*Cotinus*). Some, such as rosemary and lavender, do not.

New growth after pruning

1 Remove tall stems
Remove all dead and diseased wood, taking it back to healthy growth. Then prune back tall stems, removing them a little at a time so that they do not tear at the base. At this stage, cut the stems to about 2ft (60cm) high, keeping in mind the plant's balanced shape as you prune.

2 Make final pruning cuts
Prune out any remaining crossing stems. Once you have cut back the tall growths, check where you can make your final pruning cuts. Cut out the old growths completely to leave five or six strong young stems.

3 Cut back remaining stems
Cut back the young healthy stems that are left, so that they are 12–16in (30–40cm) above the ground. The final cuts should be at an angle so rainwater can run off. Later in the year, a mass of young shoots will appear along these stems (*see left*).

ABOVE: Contrasting foliage
The golden leaves of *Choisya ternata* Sundance ('Lich') provide a glowing contrast with the adjacent rich pink-red *Berberis thunbergii* 'Rose Glow' and dark purple *Cotinus coggygria* 'Royal Purple'.

As well as the evergreen staples like boxwood (*Buxus*), privet (*Ligustrum*), and shrubby honeysuckle (*Lonicera nitida*), which are commonly used, consider colorful deciduous shrubs, like the prickly *Berberis thunbergii* and its cultivars, or the evergreen *Photinia* x *fraseri* 'Red Robin', which produces fiery young foliage in spring and after clipping.

Certain shrubs are also ideal for topiary, their small leaves lending themselves to detailed shaping. Suitable shrubs include boxwood and shrubby honeysuckle.

Shrubs such as fuchsias, hebes, fatsias, and choisyas are ideal for containers. Pots also limit the size of larger shrubs.

Year-round interest

There is a shrub in flower almost every month of the year. Interest begins in spring with a range of colorful varieties, including flowering currants (*Ribes*), ceanothus, and rhododendrons. The display continues with an abundance of summer-flowering shrubs like fuchsias, hydrangeas, buddlejas, and spiraeas, followed in fall by a range of colorful berries offered by plants such as pyracanthas, cotoneasters, and *Skimmia japonica*. Many shrubs retain their fruits into winter, providing birds and wildlife with a much-needed supply of food.

As temperatures fall, the fragrant flowers of witch hazel (*Hamamelis*), mahonias, and winter box (*Sarcococca*) open, bringing new interest to the garden. Combine these with the vivid stems of coppiced dogwoods (*Cornus* species) and variegated evergreens for a dramatic winter scheme.

Spring pastels
Ceanothus flowers appear in late spring, decorating the garden with various shades of blue and white. These short-lived evergreens enjoy a warm, sunny site.

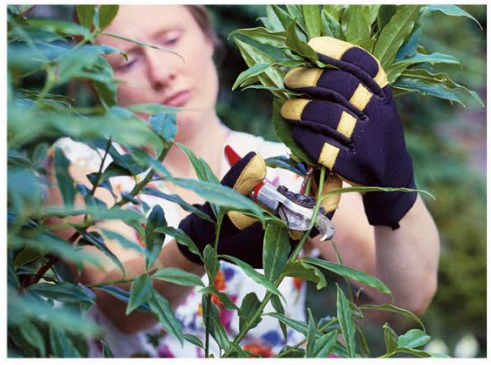
Feast of berries
The bright red berries of a female *Skimmia japonica*, produced where plants of both sexes are grown together, persist well into winter.

KEEPING SHRUBS IN SHAPE

Many young plants and shrubs, such as daphnes, produce long, leggy growths in spring or early summer after flowering. They do not require major pruning, but a light trim will produce a more compact, bushy shrub that will be covered in flowers the following year.

1 Assess your plant

In early summer, after daphnes have flowered, young leggy shoots sprout from the main stems. Before cutting them back, take a look at the shrub to see where to cut to produce a well-shaped plant.



2 Shorten leggy growths

Using a pair of pruners, shorten the leggy growths by 6–8in (15–20cm). It is important that you always prune immediately above a leaf bud with an angled, slanting cut, as shown above.

3 Work around the plant

Circle the plant, shortening each of the whippy stems, and checking that you are maintaining a good shape. The cut stems will then produce bushier growth and more flowers the following year.

Osmanthus delavayi
Evergreen, rounded, bushy shrub with arching branches. Has small, glossy, dark green leaves and a profusion of very fragrant, tubular, white flowers from mid- to late spring.

☼ 💧Z7–9

Anopterus glandulosus
Evergreen, bushy shrub or, occasionally, small tree. Has narrow, glossy, dark green leaves, amid which clusters of cup-shaped, white or pink flowers appear from mid- to late spring.

◑ 💧 pH Z11

***Viburnum plicatum* f. *tomentosum* 'Mariesii'**
Deciduous, spreading shrub with tiered branches clothed in dark green leaves, which turn reddish-purple in fall. Large, rounded heads of flowers with white bracts appear in late spring and early summer.

☼ 💧Z4–8 ⓘ

Osmanthus* x *burkwoodii
Evergreen, rounded, dense shrub. Glossy foliage is dark green and sets off a profusion of small, very fragrant, white flowers from mid- to late spring.

☼ 💧Z7–9

Pieris japonica
Evergreen, rounded, bushy, dense shrub with glossy, dark green foliage that is bronze when young. Produces drooping racemes of white flowers during spring.

◑ 💧 pH Z6–8 ⓘ

Malus sargentii
Deciduous, spreading shrub or small tree with arching branches. A profusion of white flowers are borne in late spring, followed by long-lasting, deep red fruits. Ovate, dark green leaves are sometimes lobed, and turn red or yellow in fall.

☼ 💧Z5–9

Dipelta yunnanensis
Deciduous, arching shrub with peeling bark and glossy leaves. In late spring produces tubular, creamy-white flowers, marked orange inside.

☼ 💧Z7–9

Amelanchier lamarckii
Deciduous, spreading shrub. Young leaves unfold bronze as abundant sprays of star-shaped, white flowers open from mid- to late spring. Foliage matures to dark green, then turns brilliant red and orange in fall.

☼ 💧Z5–9

Staphylea pinnata (Bladder nut)
Deciduous, upright shrub that in late spring carries clusters of white flowers, tinted pink with age, followed by bladderlike, green fruits. Foliage is divided and bright green.

◑ 💧Z6–9

PINK

RED

YELLOW

Enkianthus campanulatus
Deciduous, bushy, spreading shrub with red shoots and tufts of dull green leaves that turn bright red in fall. Small, bell-shaped, red-veined, creamy-yellow flowers appear in late spring.

☼ ◊ pH Z5–8

Viburnum* x *carlcephalum
Deciduous, rounded, bushy shrub. In late spring, large, rounded heads of pink buds open to fragrant, white flowers. These are borne amid dark green foliage that often turns red in fall.

☼ ◊ Z6–8 !

Dipelta floribunda
Vigorous, deciduous, upright, treelike shrub with peeling, pale brown bark. Fragrant, pale pink flowers, marked yellow inside, open in late spring and early summer. Has pointed, mid-green leaves.

☼ ◊ Z6–9

***Staphylea holocarpa* 'Rosea'**
Deciduous, upright shrub or spreading, small tree. From mid- to late spring bears pink flowers, followed by bladder-like, pale green fruits. Bronze young leaves mature to blue-green.

☼ ◊ Z6–9

Photinia serratifolia
Evergreen, upright shrub or bushy tree. Oblong, often sharply toothed leaves are red when young, maturing to glossy, dark green. Small, 5-petaled flowers from mid- to late spring are sometimes followed by spherical, red fruits.

◐ ◊ Z9–10

***Photinia* x *fraseri* 'Red Robin'**
Evergreen, upright, dense shrub. Oblong, glossy, dark green leaves are brilliant red when young. Bears 5-petaled flowers in late spring. Has good resistance to damage by late frost.

☼ ◊ Z8–9

Daphniphyllum macropodum
Evergreen, bushy, dense shrub with sturdy shoots and dark green leaves. Small flowers, green on female plants, purplish on male plants, appear in late spring.

☼ ◊ Z7–11

Berberis valdiviana
Evergreen shrub with oval to ovate, leathery leaves with 3-pronged spines. Pendulous racemes, to 1½in (4cm) long, of cup-shaped, fragrant, saffron-yellow flowers, in late spring, are followed by egg-shaped, bloomed, purple fruits.

☼ ◊ Z8–10

Corylopsis glabrescens
Deciduous, open shrub. Ovate leaves, with bristlelike teeth along margins, are dark green above, blue-green beneath. Drooping spikes of fragrant, bell-shaped, pale yellow flowers appear in midspring on bare branches.

☼ ◊ pH Z6–9

Berberis darwinii (Darwin's barberry)
Vigorous, evergreen, arching shrub. Has small, glossy, dark green leaves and a profusion of rounded, deep orange-yellow flowers from mid- to late spring, followed by bluish berries.

☼ ◊ Z7–9 !

Salix exigua (Coyote willow)
Deciduous, upright shrub with slender, green-gray branches and linear, finely toothed, silky, silvery-white leaves, which move in the breeze. Small, pale lemon catkins are produced in spring, at the same time as the leaves emerge from bud.

☼ ◖ Z4–6

Olearia virgata
Evergreen, arching, graceful shrub with very narrow, dark gray-green leaves. Produces an abundance of small, star-shaped, white flower heads in early summer, arranged in small clusters along stems.

☼ ◖ Z7–11

Viburnum rhytidophyllum
Vigorous, evergreen, open shrub with long, narrow, deep green leaves. Dense heads of small, creamy-white flowers in late spring and early summer are succeeded by red fruits that mature to black.

☼ ◖ Z5–8 ⓘ

Styrax officinalis
Deciduous, loose to dense shrub or small tree. Fragrant, bell-shaped, white flowers appear in early summer among ovate, dark green leaves with grayish-white undersides.

☼ ◖ pH Z14–15

Xanthoceras sorbifolium
Deciduous, upright shrub or small tree with bright green leaves divided into many slender leaflets. In late spring and early summer, produces spikes of white flowers with red patches inside at the base of the petals.

☼ ◖ Z5–8

Ligustrum sinense
Deciduous or semievergreen, bushy, upright shrub with ovate, pale green leaves. Large panicles of fragrant, tubular, white flowers are borne in midsummer, followed by small, purplish-black fruits.

☼ ◖ Z7–9 ⓘ

Escallonia leucantha
Evergreen, upright shrub. Narrow, ovate, glossy, dark green leaves set off large racemes of small, shallowly cup-shaped, white flowers in midsummer.

☼ ◖ Z8–9

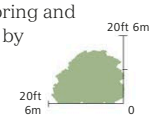
***Escallonia* 'Iveyi'**
Evergreen, upright shrub. Glossy, dark green foliage sets off large racemes of fragrant, tubular, pure white flowers, with short lobes, borne from mid- to late summer.

☼ ◖ Z8–9

Chionanthus virginicus (Fringe tree)
Deciduous, bushy shrub or small tree. Has large, glossy, dark green leaves that turn yellow in fall. Drooping sprays of fragrant, white flowers appear in early summer.

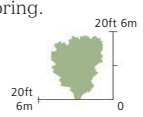
☼ ◖ Z4–9

Elaeagnus umbellata
Vigorous, deciduous, bushy shrub with oblong, wavy-edged, bright green leaves, which are silvery when young. Has fragrant, bell-shaped, creamy-yellow flowers in late spring and early summer, followed by egg-shaped, red fruits.



☼ 💧 Z4–8

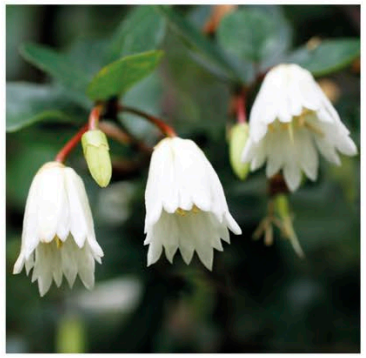
***Syringa vulgaris* 'Madame Florent Stepman'**
Deciduous, upright then spreading shrub with large panicles of fragrant, tubular, single, white flowers borne profusely in late spring. Has heart-shaped, dark green leaves.



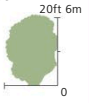
☼ 💧 Z4–8

Abelia* x *grandiflora
Vigorous, semievergreen, arching shrub. Has glossy, dark green foliage and an abundance of fragrant, pink-tinged, white flowers from midsummer to midfall.

☼ 💧 Z6–9

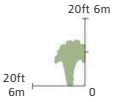


Crinodendron patagua
Vigorous, evergreen, upright shrub with slightly hairy, reddish young shoots and oval to ovate, coarsely toothed, leathery, dark green leaves. Bell-shaped, frilly-edged, white flowers in late summer are followed by angular, red seed pods.



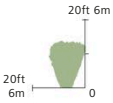
☼ 💧 pH Z9–10

Abutilon vitifolium* var. *album
Fast-growing, deciduous, upright shrub. Large, bowl-shaped, white blooms, pink-tinged when young, are freely borne in late spring and early summer amid deeply lobed, sharply toothed, gray-green leaves.



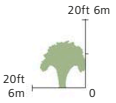
☼ 💧 Z8–9

Zabelia triflora
Vigorous, deciduous, upright shrub with pointed, deep green leaves. Small, extremely fragrant, white flowers, tinged pale pink, appear in midsummer.



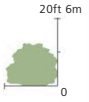
☼ 💧 Z7–9

Holodiscus discolor
Fast-growing, deciduous, arching shrub. Has lobed, toothed, dark green leaves and large, pendent sprays of small, creamy-white flowers in midsummer.



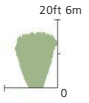
☼ 💧 Z6–9

Aesculus parviflora
(Bottlebrush buckeye)
Deciduous, open shrub. Leaves are bronze when young, dark green in summer and yellow in fall. Panicles of red-centered, white flowers appear from mid- to late summer.



☼ 💧 Z5–9 ⓘ

Clethra delavayi
Deciduous, open shrub with lance-shaped, toothed, rich green leaves. Dense, spreading clusters of pink buds opening to scented, white flowers appear in midsummer.

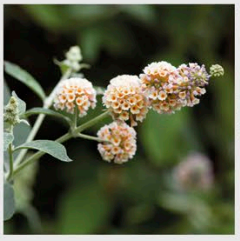


☼ 💧 pH Z7–9

BUDDLEJAS

Buddleja is a genus of approximately 100 species of highly ornamental evergreen and deciduous shrubs and small trees, originating predominantly from Asia, Africa, and the Americas. Buddlejas are often included in wildlife gardens because they encourage increased insect activity: one species has earned the common name "butterfly bush," but they all also attract bees and hoverflies. They produce small, highly-scented, tubular flowers borne in either plume or globular-shaped clusters. Easy to grow, they thrive in almost any soil, and perform best in a warm, sunny position. They are particularly suitable for growing against a south-facing wall.

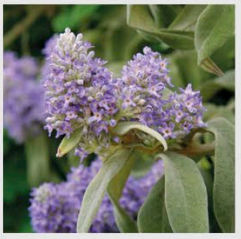
***B. davidii* 'White Profusion'**



***B.* x *weyeriana* 'Moonlight'**

***B. colvilei* 'Kewensis'**

***B. davidii* 'Pink Delight'**



B. salviifolia

B. alternifolia

***B. davidii* 'Black Knight'**

***B. davidii* 'Dartmoor'**

***B.* 'Lochinch'**

***B.* x *weyeriana* 'Sungold'**

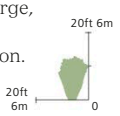
LARGE

SUMMER

PINK

***Abutilon vitifolium* 'Veronica Tennant'**

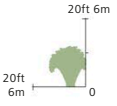
Fast-growing, generally deciduous, but sometimes semievergreen, upright shrub or small tree. Has rounded, toothed, gray-green leaves. In spring and early summer, large, saucer-shaped, purple-blue flowers are borne in profusion.



☼ 💧Z8–9

***Kolkwitzia amabilis* 'Pink Cloud'**

Deciduous, arching shrub that bears a mass of bell-shaped, pink flowers amid small, ovate, mid-green leaves in late spring and early summer.



☼ 💧Z5–9

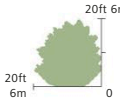
Tamarix ramosissima

Deciduous, arching, graceful shrub or small tree with tiny, narrow, blue-green leaves. In late summer and early fall bears large, upright plumes of small, pink flowers.

☼ 💧Z3–8

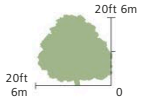
PURPLE

***Cotinus* 'Grace'**
Deciduous, vigorous, bushy shrub or small tree with ovate purple leaves, that turn a brilliant translucent red in fall. In summer produces purple-pink fruiting panicles.



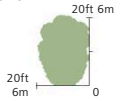
☼ 💧Z5–8

***Acer palmatum* 'Atropurpureum'**
Deciduous, bushy-headed shrub or small tree with lobed, reddish-purple foliage that turns brilliant red in fall. Small reddish-purple flowers are borne in midspring.



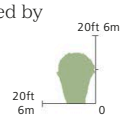
☼ 💧Z5–8

***Corylus maxima* 'Purpurea'**
Vigorous, deciduous, open shrub or small tree with deep purple leaves and purplish catkins, with yellow anthers, that hang from bare branches in late winter. Edible nuts mature in fall.



☼ 💧Z4–9

***Prunus spinosa* 'Purpurea'**
Deciduous, dense, spiny shrub or small tree. Bright red, young leaves become deep reddish-purple. Bears saucer-shaped, pale pink flowers from early to mid-spring, followed by blue-bloomed, black fruits.



☼ 💧Z5–8

LILACS

The heady scent of the lilac (*Syringa*) epitomizes early summer. Apart from the classic lilacs and mauves, colors include white, pink, cream, and rich red-purple; double forms are also available. Most lilacs grown in gardens are vigorous shrubs derived from *S. vulgaris*. They may eventually become treelike and are best planted at the back of a shrub border. Spent flower heads should be removed, with care taken not to damage the new shoots. Otherwise, little pruning is required, though older plants may be rejuvenated by hard pruning in winter.

***S. pubescens* subsp. *patula* 'Miss Kim'**

***S. pubescens* subsp. *microphylla* 'Superba'**

S.* x *persica

***S. vulgaris* 'Katherine Havemeyer'**

***S. vulgaris* 'Andenken an Ludwig Späth'**

***S. vulgaris* 'Madame Lemoine'**

***S. meyeri* 'Palibin'**

***S.* x *persica* 'Alba'**

S. komarowii* subsp. *reflexa

***S. vulgaris* 'Firmament'**

***Genista pilosa* 'Procumbens'**
Vigorous, deciduous, arching shrub with narrowly oblong, gray-green leaves. Racemes of fragrant, pealike, golden-yellow flowers are produced in early to mid-summer.

☼ 💧Z9–11

Elaeagnus angustifolia (Russian olive)
Deciduous, bushy shrub or spreading, small tree. Has narrow, silvery-gray leaves and small, fragrant, creamy-yellow flowers, with spreading lobes, in early summer, followed by small, oval, yellow fruits.

☼ 💧Z2–8

Genista cinerea
Deciduous, arching shrub that produces an abundance of fragrant, pealike, yellow blooms from early to mid-summer. Has silky, young shoots and narrow, gray-green leaves.

☼ 💧Z7–9

***Cotinus coggygria* GOLDEN SPIRIT ('Ancot')** (Golden smokebush)
Deciduous, bushy shrub grown for its rounded, golden-yellow leaves, which turn orange in fall. In summer, tiny, fluffy, plumelike, gray flower clusters, on fine stalks, are borne above the leaves.

☼ 💧Z5–9

Agyrocytisus battandieri
(Moroccan broom, pineapple broom)
Semievergreen, open shrub. Leaves have 3 silver-gray leaflets. Pineapple-scented, yellow flowers appear in summer.

☼ 💧Z7–9 ⓘ

Buddleja globosa
Deciduous or semievergreen, open shrub with dark green foliage. Dense, rounded clusters of orange-yellow flowers are carried in early summer.

☼ 💧Z7–9

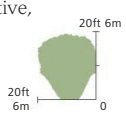
Caesalpinia gilliesii
Deciduous, open shrub or small tree. Has finely divided, dark green leaves and bears short racemes of yellow flowers with long, red stamens from mid- to late summer.

☼ 💧Z8–11

Paliurus spina-christi
(Christ's thorn, Jerusalem thorn)
Deciduous, bushy shrub with slender, thorny shoots. Has ovate, glossy, bright green leaves, tiny, yellow flowers in summer, and curious, woody, winged fruits in fall.

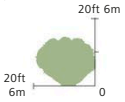
☼ 💧Z7–9

***Cotoneaster* 'Cornubia'**
Vigorous, semievergreen, arching shrub. Clusters of white flowers, produced in early summer amid dark green foliage, are followed by large, pendent clusters of decorative, bright red fruits.



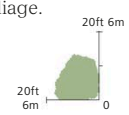
☼ ◊ Z6–8 ⓘ

***Rhus typhina* 'Dissecta'**
Deciduous, spreading, open shrub or small tree with velvety shoots. Fernlike, dark green leaves turn brilliant orange-red in fall, when deep red fruit clusters are also borne.



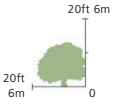
☼ ◊ Z3–8

***Cotinus* 'Flame'**
Deciduous, bushy, treelike shrub with dark green leaves that turn brilliant orange-red in fall. From late summer, showy, plumelike, purplish-pink flower heads appear above the foliage.



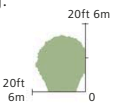
☼ ◊ Z5–8

Euonymus myrianthus
Evergreen, bushy shrub with pointed, leathery, mid-green leaves. Dense clusters of small, greenish-yellow flowers in summer are followed by yellow fruits that open to show orange-red seeds.



☼ ◐ Z7–9 ⓘ

Fothergilla major
Deciduous, upright shrub with glossy, dark green leaves, slightly bluish-white beneath, that turn red, orange, and yellow in fall. Tufts of fragrant, white flowers appear in late spring.

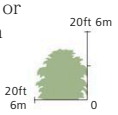


☼ ◐ pH Z5–8

Cotoneaster lacteus
Evergreen, arching shrub suitable for hedging. Ovate, dark green leaves set off shallowly cup-shaped, white flowers from early to mid-summer. Long-lasting, red fruits are carried in large clusters in fall–winter.

☼ ◊ Z7–9 ⓘ

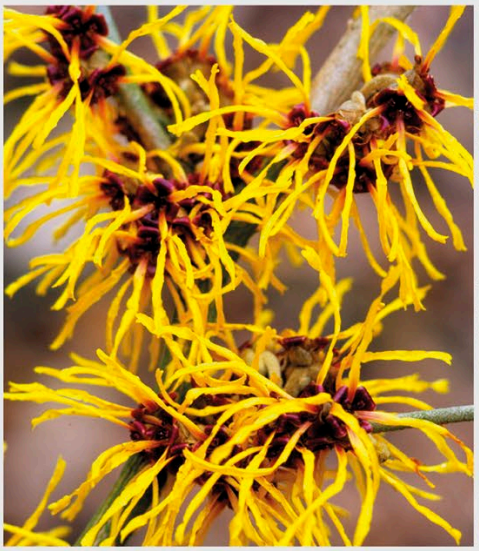
Euonymus oxyphyllus
Deciduous, upright shrub or tree with ovate, dull green leaves turning to purplish-red in fall. Produces tiny, greenish-white flowers in late spring, then globose, 4- or 5-lobed, deep red fruits with orange-scarlet seeds.



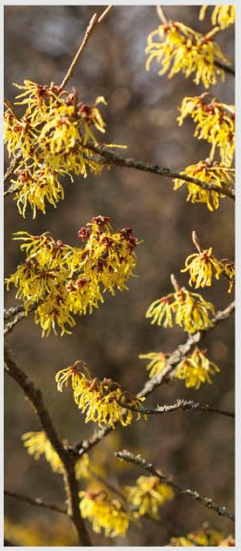
☼ ◊ Z6–9 ⓘ

WITCH HAZELS

Species of *Hamamelis* put on a beautiful show of fragrant flowers during the darkest, coldest months, securing their place in any winter planting scheme. The spiderlike blooms, ranging in color from deep red to sulfur yellow, appear on bare branches from late fall to early spring, the narrow, crepe-paper-like petals withstanding several degrees of frost and snow without damage. Witch hazels prefer moist but well-drained, fertile, acidic to neutral soil in full sun or partial shade. A spring dressing of lime-free potting mix or well-rotted leaf mold benefits young plants.



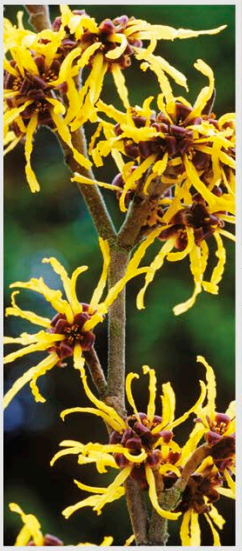
***H.* x *intermedia* 'Barmstedt Gold'**



***H.* x *intermedia* 'Arnold Promise'**

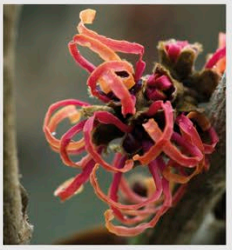
***H.* x *intermedia* 'Pallida'**

***H.* x *intermedia* 'Jelena'**



***H.* x *intermedia* 'Primavera'**

***H.* x *intermedia* 'Aphrodite'**



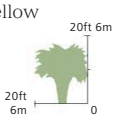
***H.* x *intermedia* 'Robert'**

LARGE

WINTER

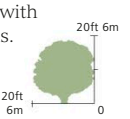
YELLOW

***Pyracantha atalantioides* 'Aurea'**
Vigorous, evergreen, upright, spiny shrub, arching with age. Has narrowly ovate, glossy, dark green leaves and white flowers in early summer, followed by large clusters of small, yellow berries in early fall.



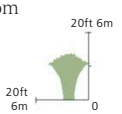
☼ 💧Z6–9 ⓘ

***Corylus avellana* 'Contorta'**
(Corkscrew hazel)
Deciduous, bushy shrub with curiously twisted shoots and broad, sharply toothed, mid-green leaves. In late winter, bare branches are covered with pendent, pale yellow catkins.



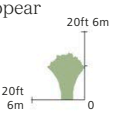
☼ 💧Z3–9

***Mahonia* x *media* 'Charity'**
Evergreen, upright, dense shrub with large leaves composed of many spiny, dark green leaflets. Slender, upright, later spreading spikes of fragrant, yellow flowers are borne from early fall to early spring.



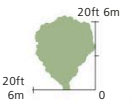
◐ 💧Z8–9

***Mahonia* x *media* 'Buckland'**
Evergreen, upright, dense shrub. Has large leaves with many spiny, dark green leaflets. Clustered, upright then spreading, long, branched spikes of fragrant, yellow flowers appear from late fall to early spring.



◐ 💧Z8–9

Azara microphylla
Elegant, evergreen shrub or small tree. Has tiny, glossy, dark green leaves and small clusters of vanilla-scented, deep yellow flowers in late winter and early spring.



☼ 💧Z8–10

WHITE

GREEN

***Azara microphylla* 'Variegata'**
Slow-growing, evergreen, compact shrub. Small, rounded, glossy, dark green leaves have creamy-gold margins. In early spring, bears clusters of tiny, chocolate-scented, yellow-green flowers on the underside of the branches.

☼ 💧Z8–10

***Prunus lusitanica* 'Variegata'**
Slow-growing, evergreen, bushy shrub with reddish-purple shoots. Has ovate, glossy, dark green, white-edged leaves. Fragrant, shallowly cup-shaped, creamy-white flowers in summer are followed by purple fruits.

☼ 💧Z7–9 ⓘ

Ligustrum ovalifolium (Privet)
Vigorous, evergreen or semievergreen, upright, dense shrub with glossy, mid-green leaves. Bears racemes of small, rather unpleasantly scented, tubular, white flowers in midsummer, followed by black fruits.

☼ 💧Z6–8 ⓘ

***Griselinia littoralis* 'Variegata'**
Evergreen, upright shrub of dense, bushy habit. Leathery leaves are gray-green, marked with bright green and creamy-white. Bears inconspicuous, yellow-green flowers in late spring.

☼ 💧Z7–9

Pittosporum dallii
Evergreen, rounded, dense tree or shrub. Has purplish stems and sharply toothed, deep green leaves. Clusters of small, fragrant, shallowly cup-shaped, white flowers are produced in summer.

☼ 💧Z9–11

***Elaeagnus pungens* 'Maculata'**
Evergreen, bushy, slightly spiny shrub. Glossy, dark green leaves are marked with a central, deep yellow patch. Very fragrant, urn-shaped, creamy-white flowers open from mid- to late fall.

☼ 💧Z7–9

***Osmanthus heterophyllus* 'Aureomarginatus'**
Evergreen, upright shrub. Sharply toothed, hollylike, glossy, bright green leaves have yellow margins. Small, fragrant, white flowers are produced in fall.

☼ 💧Z7–9

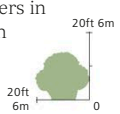
***Pittosporum* 'Garnettii'**
Evergreen, columnar or conical shrub of dense, bushy habit. Rounded, gray-green leaves, irregularly edged creamy-white, become tinged with deep pink in cold areas. May bear small, greenish-purple flowers in spring–summer.

☼ 💧Z9–11

Prunus lusitanica* subsp. *azorica
Evergreen, bushy shrub with reddish-purple shoots and bright green leaves, red when young. Bears spikes of small, fragrant, white flowers in summer, followed by purple fruits.

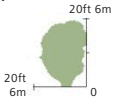
☼ 💧Z7–9 ⓘ

Tetrapanax papyrifer
(Rice-paper plant)
Evergreen, upright, suckering shrub. Long-stalked, circular leaves are deeply lobed. Has bold sprays of small, creamy-white flowers in summer and black berries in fall–winter.



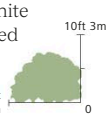
☼ ◖ Z6–11

Pittosporum tenuifolium
Evergreen, columnar, later rounded shrub or small tree with purple shoots and wavy-edged, ovate, glossy, mid-green leaves. Bears honey-scented, purple flowers in late spring.



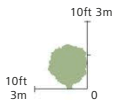
☼ ◖ Z9–11

***Viburnum* x *globosum* 'Jermyns Globe'**
Evergreen, rounded shrub with narrow, tapered, dark green leaves, 3-veined at the bases. Bears flattened, terminal corymbs of small, tubular, white flowers in late spring, followed by small, ovoid, blue fruits.



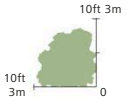
☼ ◖ pH Z7–9 ⓘ

Enkianthus perulatus
Deciduous, bushy, dense shrub. Dark green leaves turn bright red in fall. A profusion of small, pendent, urn-shaped, white flowers are borne in midspring.



☼ ◖ pH Z6–8

***Pieris japonica* 'Scarlett O'Hara'**
Evergreen, rounded, bushy, dense shrub. Young foliage and shoots are bronze-red, leaves becoming glossy, dark green. Produces sprays of white flowers in spring.

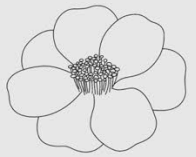


☼ ◖ pH Z6–8 ⓘ

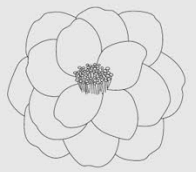
CAMELLIAS

These evergreen shrubs and small trees have long been valued for their luxuriant, rich green foliage and masses of showy flowers, in shades of white, pink, red and yellow, borne mainly in winter and spring. Once thought suitable only for greenhouses, many camellias are frost hardy to Zone 6 if grown in sheltered positions, although blooms may suffer frost and rain damage. Ideal for shady gardens, they grow well against walls. Camellias require acidic soil but also make good container plants. The main flower forms are illustrated below.

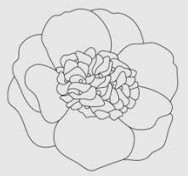
Single—flowers have not more than 8 petals, arranged in a single row, and a conspicuous, central boss of stamens.



Semidouble—flowers have 2 or more rows of 9–21 regular or irregular petals, and usually have conspicuous stamens.

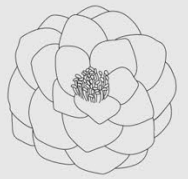


Anemone-form—flowers each have one or more rows of large, outer petals lying flat or undulating; the domed center has a mass of intermingled petaloids and stamens.

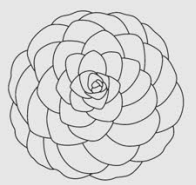


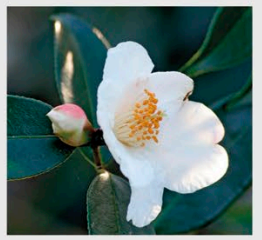
Peony-form—(sometimes termed irregular double) flowers have irregular petals intermingled with petaloids and stamens.

Rose-form—flowers have several rows of overlapping petals and open to reveal a few stamens in the center.

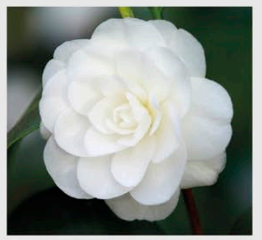


Formal double—flowers have rows of neatly overlapping (imbricated) petals that obscure the stamens.

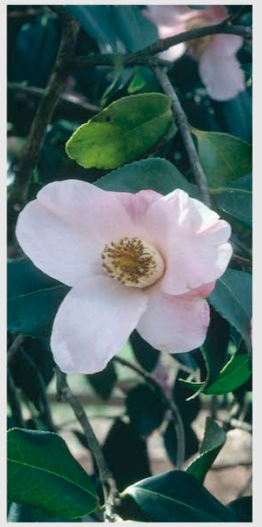




***C.* 'Cornish Snow'** [single]

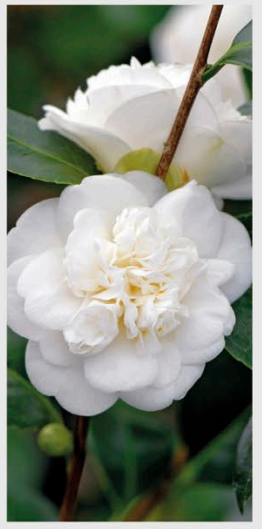


***C. japonica* 'Alba Plena'**
[formal double]



***C.* x *williamsii* 'J.C. Williams'**
[single]

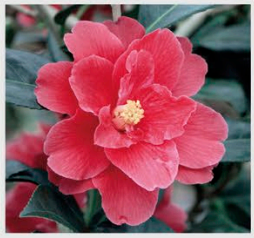
***C.* x *williamsii* 'Jury's Yellow'**
[anemone]



***C. japonica* 'Nobilissima'** [peony]

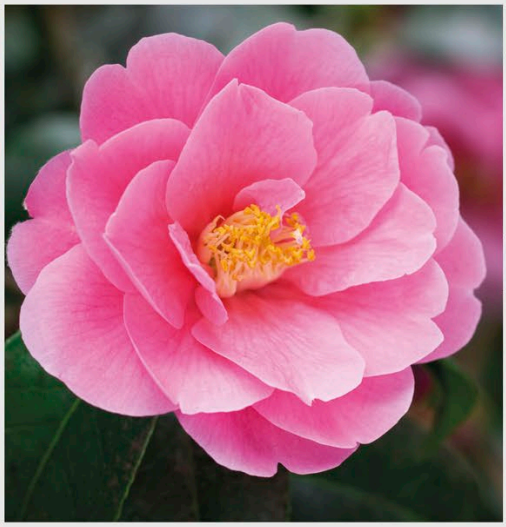
C. japonica 'Lavinia Maggi' [formal double]

C. x *williamsii* 'Donation' [semidouble]

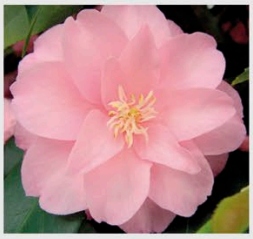


C. 'Freedom Bell' [semidouble]

C. x *williamsii* 'Debbie' [peony]



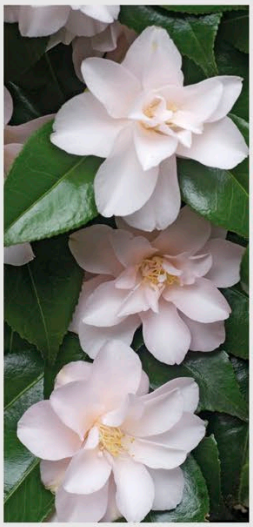
C. 'Inspiration' [semidouble]



C. 'Spring Festival' [semidouble]

C. japonica 'Margaret Davis' [peony]

C. japonica 'Adolphe Audusson' [semidouble]



C. japonica 'Hagoromo' [semidouble]

C. reticulata 'Captain Rawes' [semidouble]

C. x *williamsii* 'Water Lily' [formal double]

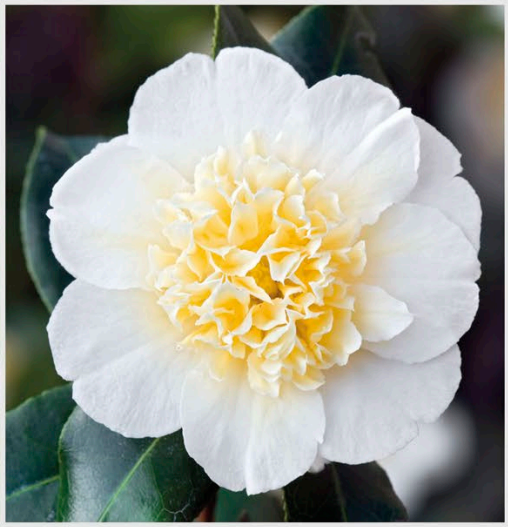
C. 'Leonard Messel' [semidouble]

C. japonica 'Bob's Tinsie' [anemone]

C. japonica 'Janet Waterhouse' [semidouble]

C. japonica 'Tricolor' [semidouble]

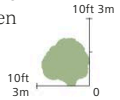
C. 'Black Lace' [formal double]



C. japonica 'Brushfield's Yellow' [anemone]

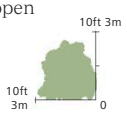
WHITE

***Choisya* x *dewitteana* 'Aztec Pearl'**
Evergreen, compact shrub with aromatic, glossy, dark green leaves composed of 3–5 linear leaflets. Clusters of scented, white flowers, pink-flushed in bud, are produced in profusion in spring and then quite often again in early fall.



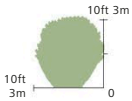
☼ 💧Z8–10

Choisya ternata
(Mexican orange)
Evergreen, rounded, dense shrub with aromatic, glossy, bright green leaves composed of 3 leaflets. Clusters of fragrant, white blooms open in late spring and often again in fall.



☼ 💧Z8–10

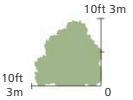
Myrtus communis (Common myrtle)
Evergreen, bushy shrub with aromatic, glossy, dark green foliage. Fragrant, white flowers are borne from midspring to early summer, followed by purple-black berries.



☼ 💧Z8–9

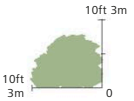
PINK

***Chaenomeles speciosa* 'Moerloosei'**
Vigorous, deciduous, bushy shrub. Has glossy, dark green leaves and pink-flushed, white flowers in early spring, followed by greenish-yellow fruits.

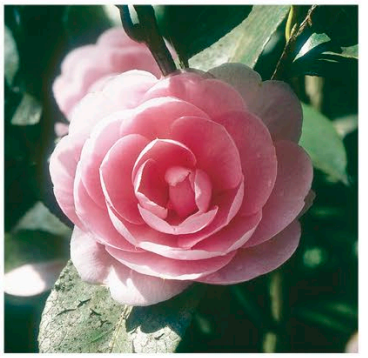


☼ 💧Z5–9

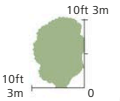
***Rhododendron* 'Percy Wiseman'**
Evergreen rhododendron with a domed, compact habit. In late spring, produces open funnel-shaped, pink flowers that fade to cream, with green markings in the throat.



◐ 💧 pH Z6–9 ⓘ

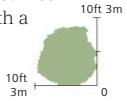


***Camellia* x *williamsii* 'E.G. Waterhouse'**
Evergreen, upright shrub with lance-shaped, pale green leaves. Formal double, pink flowers are freely produced in spring.



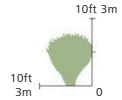
◐ 💧 pH Z7–8 ⓘ

***Ribes sanguineum* 'Pulborough Scarlet'** (Flowering currant)
Deciduous, upright shrub that in spring bears pendent, tubular, deep red flowers amid aromatic, dark green leaves, with 3–5 lobes, sometimes followed by black fruits with a white bloom.

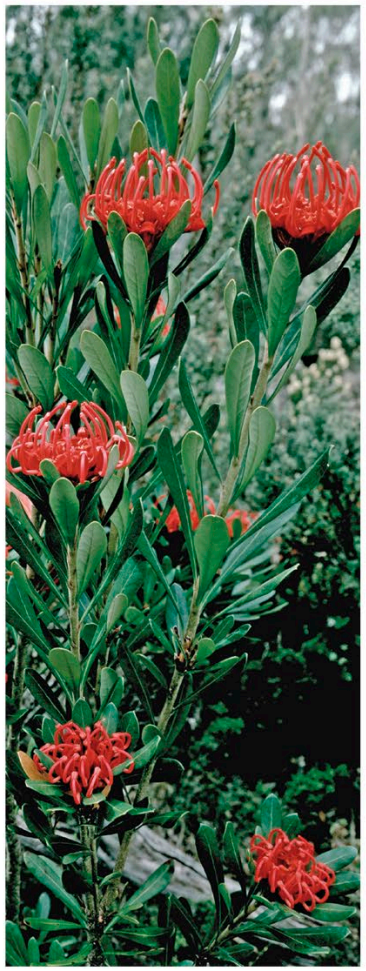


☼ 💧 Z6–8

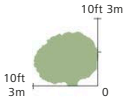
***Prunus mume* 'Beni-chidori'**
Deciduous, spreading shrub with fragrant, single, carmine flowers in early spring before pointed, dark green leaves appear.



☼ 💧 Z6–8 ⓘ

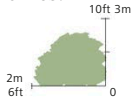


Telopea truncata (Tasmanian waratah)
Evergreen, upright shrub, bushy with age. Has deep green leaves and dense, rounded heads of small, tubular, crimson flowers in late spring and summer.



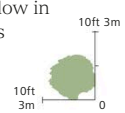
◑ 💧 pH Z13–15

***Acer palmatum* 'Shindeshojo'**
Slow-growing, deciduous, rather twiggy shrub grown for its pink-red leaf coloring in spring. Palmate, deeply lobed leaves then turn bluish-green. Much used for bonsai. Hard frost can scorch new growth.



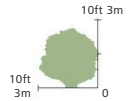
☼ 💧 Z6–8

***Acer palmatum* 'Corallinum'**
Very slow-growing, deciduous, bushy-headed shrub or small tree. Lobed, bright reddish-pink young foliage becomes mid-green, then brilliant red, orange, or yellow in fall. Reddish-purple flowers appear in midspring.



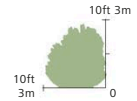
☼ 💧 Z6–8

Enkianthus cernuus* f. *rubens
Deciduous, bushy shrub with dense clusters of dull green leaves that turn deep reddish-purple in fall. Small, bell-shaped, deep red flowers appear in late spring.



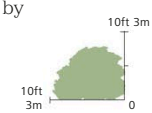
◑ 💧 pH Z6–8

***Leptospermum scoparium* 'Red Damask'**
Evergreen, upright, bushy shrub. Narrow, aromatic, dark green leaves set off sprays of double, dark red flowers in late spring and summer.



☼ 💧 Z9–10

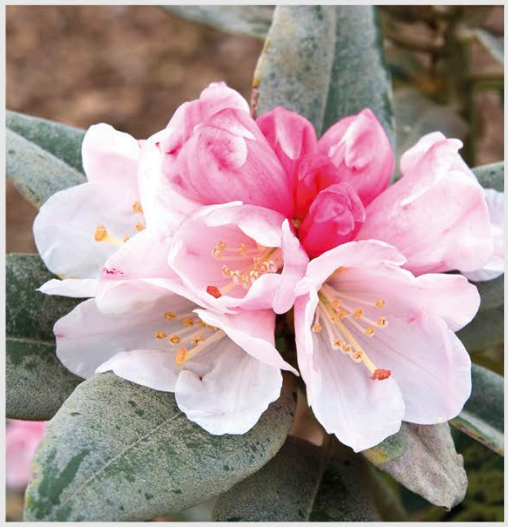
Berberis thunbergii* f. *atropurpurea
Deciduous, arching, dense shrub. Reddish-purple foliage turns bright red in fall. Globose to cup-shaped, red-tinged, pale yellow flowers in midspring are followed by red fruits.



☼ 💧 Z5–8 ⓘ

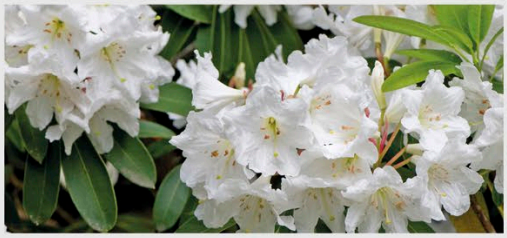
RHODODENDRONS

Rhododendrons and azaleas both belong to the huge genus *Rhododendron*, one of the largest in the plant kingdom. Azalea is the common name used for all the deciduous species and hybrids, and many of the dwarf, small-leaved evergreens. In stature, the genus ranges from small alpine shrubs only a few inches high to tall, spreading trees, in the wild reaching 80ft (24m). Rhododendrons require well-drained, acidic soil rich in organic matter. Most prefer cool, woodland conditions, although many dwarf forms thrive in more open sites. Many grow well in containers, in which it is often easier to provide suitable growing conditions. Once established, they require little attention apart from an annual mulch and occasional fertilizer, and will provide a colorful display for years.



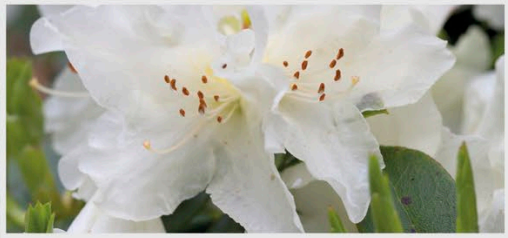
R. pachysanthum
[rhododendron]

***R.* 'Gomer Waterer'**
[rhododendron]



R. decorum [rhododendron]

***R.* 'Palestrina'** [rhododendron]



R. rex* subsp. *fictolacteum Ⓘ
[rhododendron]

***R.* 'Loderi King George'** Ⓘ
[rhododendron]

R. yakushimanum Ⓘ
[rhododendron]

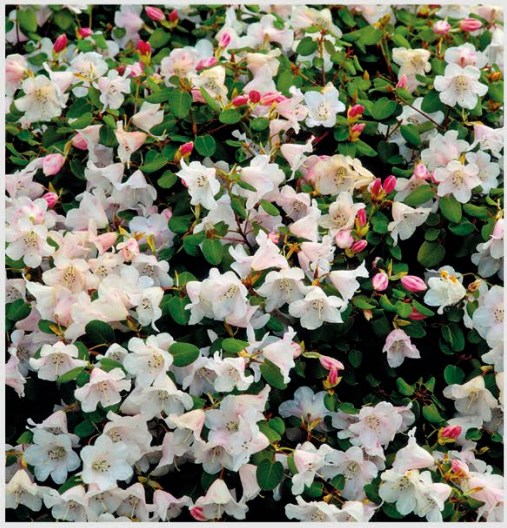
R. orbiculare Ⓘ
[rhododendron]

R. quinquefolium
[azalea]

***R.* 'Narcissiflorum'**
[rhododendron]

***R.* 'Fragrantissimum'** Ⓘ
[rhododendron]

R. sinogrande Ⓘ
[rhododendron]



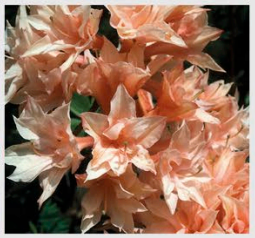
R. williamsianum Ⓘ [rhododendron]

R. falconeri Ⓘ [rhododendron]

***R.* 'Golden Torch'** [rhododendron]

*R. **fulvum*** [rhododendron]

*R. **multiflorum*** var. ***purpureum*** [rhododendron]



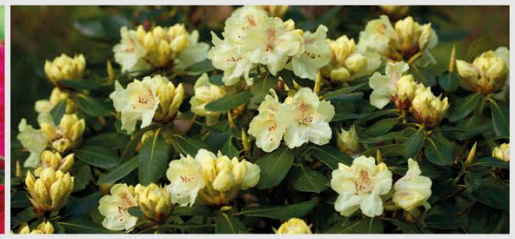
R. **'Freya'** (azalea)

R. **'Fastuosum Flore Pleno'** [rhododendron]

*R. **augustinii*** ⓘ [rhododendron]

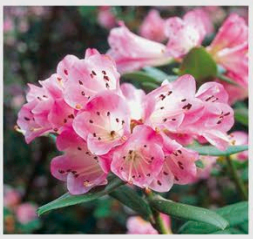
R. **'Blaauw's Pink'** [azalea]

R. **'Mother's Day'** [azalea]



R. **'Goldkrone'** ⓘ [rhododendron]

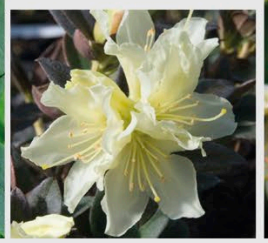
R. **'Pink Pearl'** ⓘ [rhododendron]



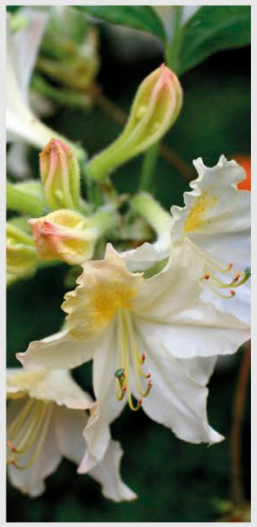
R. **'Seta'** ⓘ [rhododendron]

R. **'Grace Seabrook'** [rhododendron]

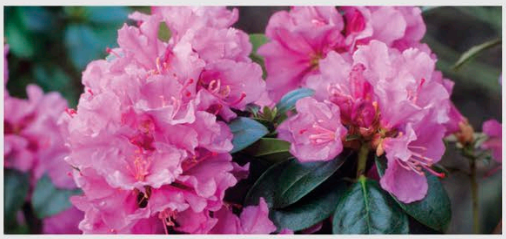
R. **'Hotei'** [rhododendron]



R. **'Patty Bee'** [rhododendron]



R. **'Daviesii'** [azalea]



R. **'Praecox'** [rhododendron]

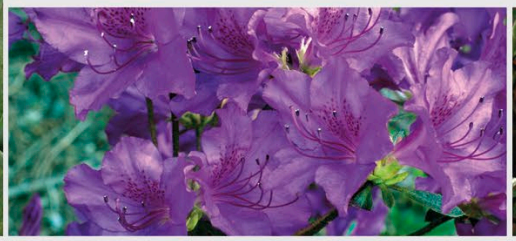
R. **'Blue Peter'** [rhododendron]

R. **'Curlew'** ⓘ [rhododendron]

*R. **luteum*** ⓘ [azalea]

*R. **arboreum*** ⓘ [rhododendron]

*R. **cinnabarinum*** ⓘ [rhododendron]



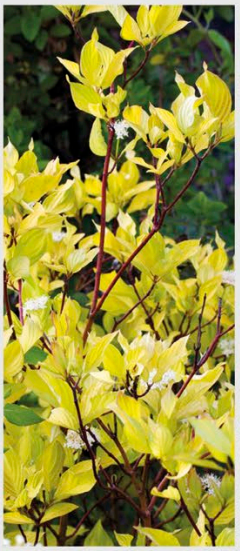
R. **'Blue Danube'** [azalea]

R. **'Gibraltar'** [azalea]

CORNUS

Shrubby members of the genus *Cornus* are justifiably popular among gardeners and landscape designers, admired for their highly ornamental, brightly colored winter stems (ranging from lime green and yellow, to orange and crimson), as well as their spring flowers and, in some cultivars, variegated foliage. Extremely hardy, dogwoods tolerate extreme cold and exposure. They also grow well on most soils, and require little maintenance—simply cut back the stems to just above the ground every two years in late winter. This promotes young growth, which has the most vibrant color.

***C. alba* 'Elegantissima'** ⓘ



***C. alba* 'Aurea'**

***C. alba* 'Spaethii'** ⓘ

***C. sanguinea* 'Anny's Winter Orange'**

***C. sericea* 'Flaviramea'**

***C. alba* 'Kesselringii'** ⓘ

***C. sericea* 'White Gold'**

***C. sanguinea* 'Midwinter Fire'**

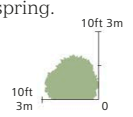
MEDIUM

SPRING

YELLOW

Corylopsis pauciflora

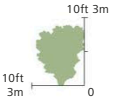
Deciduous, bushy, dense shrub. Ovate, bright green leaves, bronze when young, have bristlelike teeth. Bears fragrant, tubular to bell-shaped, pale yellow flowers from early to mid-spring.



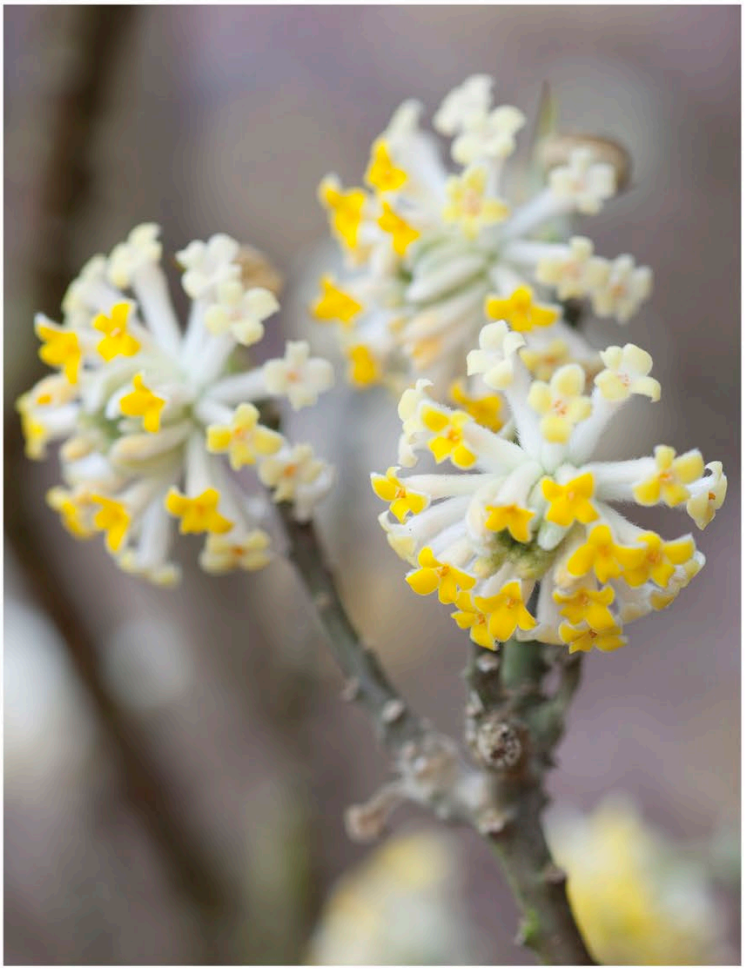
pH Z6–9

***Rhododendron* 'Yellow Hammer'**

Evergreen, erect, bushy rhododendron. Bears abundant clusters of tubular, bright yellow flowers in spring; frequently flowers again in fall.

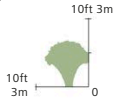


pH Z5–8



Edgeworthia chrysantha

Deciduous, rounded, open shrub with ovate, dark green leaves. Very supple shoots produce terminal, rounded heads of fragrant, tubular, yellow flowers in late winter and early spring.



Z8–10

ORANGE

WHITE

Berberis gagnepainii* var. *lanceifolia
Evergreen, bushy, dense shrub. Massed, globose to cup-shaped, yellow flowers appear among long, narrow, pointed, dark green leaves in late spring. Forms blue-bloomed, black berries.

***Forsythia* x *intermedia* 'Spectabilis'**
Vigorous, deciduous, spreading shrub with sturdy growth. A profusion of large, deep yellow flowers is borne from early to mid-spring before sharply toothed, dark green leaves appear.

Lindera benzoin (Spicebush)
Deciduous, bushy shrub with aromatic, bright green leaves that turn yellow in fall. Tiny, greenish-yellow flowers in midspring are followed by red berries on female plants.

***Kerria japonica* 'Pleniflora'**
Vigorous, deciduous, graceful shrub. Double, golden-yellow flowers are borne along green shoots from mid- to late spring. Leaves are narrowly ovate, sharply toothed and bright green.

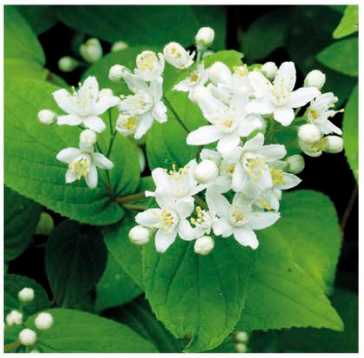
Berberis* x *stenophylla
Evergreen, arching shrub with slender shoots and narrow, spine-tipped, deep green leaves, blue-gray beneath. Massed, golden-yellow flowers appear from mid- to late spring, followed by small, blue-black fruits.

***Berberis trigona* 'Orange King'**
Evergreen, upright, stiff-branched shrub with narrow, rigid, dark green leaves. Bears large, globose to cup-shaped, deep orange flowers in late spring.

***Berberis* x *lologensis* 'Stapehill'**
Vigorous, evergreen, arching shrub. Glossy, dark green foliage sets off profuse racemes of globose to cup-shaped, orange flowers from mid- to late spring.

Euphorbia mellifera (Honey spurge)
Evergreen, rounded shrub grown mainly for its long, narrowly oblong, rich green leaves with cream midribs. Small, honey-scented, brown flowers, surrounded by showy bracts, are produced in dome-shaped clusters in late spring.

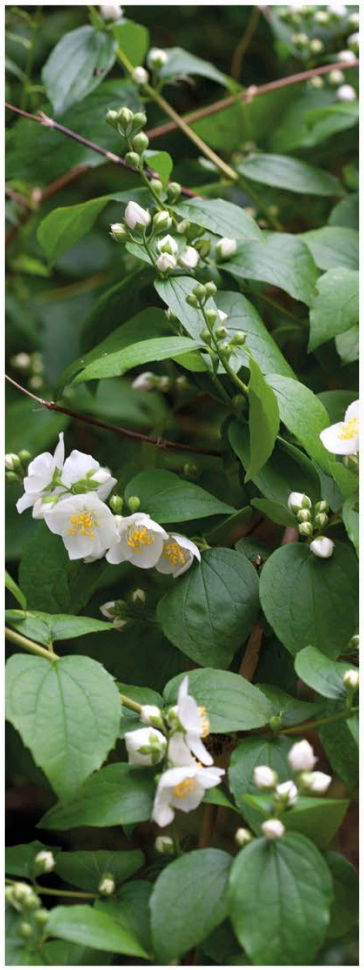
***Philadelphus* 'Beauclerk'**
Deciduous, slightly arching shrub. Large, fragrant flowers, white with a small, central, pale purple blotch, are produced from early to mid-summer. Leaves are dark green.



Deutzia scabra
Deciduous, upright shrub with narrowly ovate, dark green leaves that, from early to mid-summer, set off dense, upright clusters of 5-petaled, white blooms.

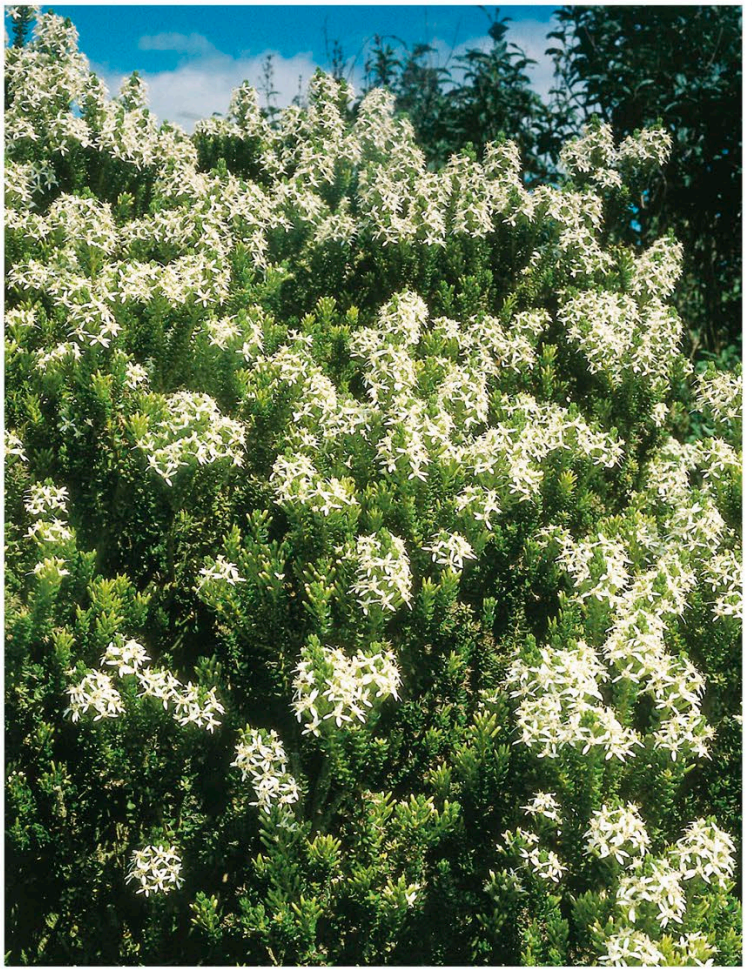
***Philadelphus* 'Belle Etoile'**
Deciduous, arching shrub. Very fragrant, white flowers, each with a pale purple mark at the base, are borne profusely among mid-green foliage in late spring and early summer.

☼ 💧Z5–8



***Philadelphus* 'Sybille'**
Deciduous, arching shrub. Produces a profusion of fragrant, 4-petaled, white flowers, with a conspicuous purple mark in the center, in early and mid-summer. Leaves are mid-green and ovate.

☼ 💧Z5–8 ⓘ

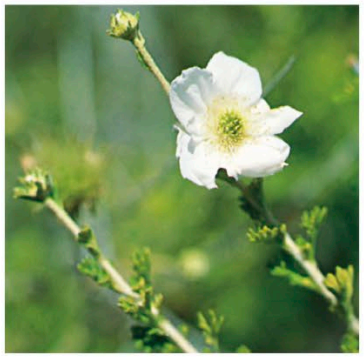


Olearia nummulariifolia
Evergreen, rounded shrub with stiff, upright shoots densely covered with small, very thick, mid- to dark green leaves. Small, fragrant, white flowers appear in midsummer.

☼ 💧Z7–10

***Rubus* 'Benenden'**
Deciduous, arching, thornless shrub with peeling bark. Large, roselike, pure white flowers are borne among lobed, deep green leaves in late spring and early summer.

☼ 💧Z5–9



Fallugia paradoxa (Apache plume)
Deciduous, bushy shrub that bears white flowers in midsummer, followed by silky, pink- and red-tinged, green fruits. Dark green leaves are finely cut and feathery.

☼ 💧Z6–8

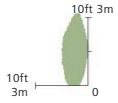
Sorbaria kirilowii
Deciduous, vigorous, arching shrub with red shoots when young. Leaves have 11–23 narrowly lance-shaped, taper-pointed, dark green leaflets. Upright panicles of star-shaped white flowers are borne in mid- to late summer.

☼ 💧Z2–9

Aronia melanocarpa
(Black chokeberry)
Deciduous, bushy shrub. White flowers appear in late spring and early summer, followed by black fruits. Has glossy, dark green leaves that turn red in fall.

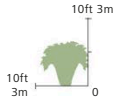
☼ 💧Z3–8

Eucryphia milliganii
Evergreen, upright, narrow shrub. Has tiny, dark green leaves, bluish-white beneath, and small, white flowers, borne in midsummer.



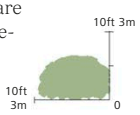
☼ ◖ pH Z8–9

***Philadelphus* 'Lemoinei'**
(Mock orange)
Deciduous, upright, slightly arching shrub that produces profuse racemes of small, extremely fragrant, white flowers from early to mid-summer.

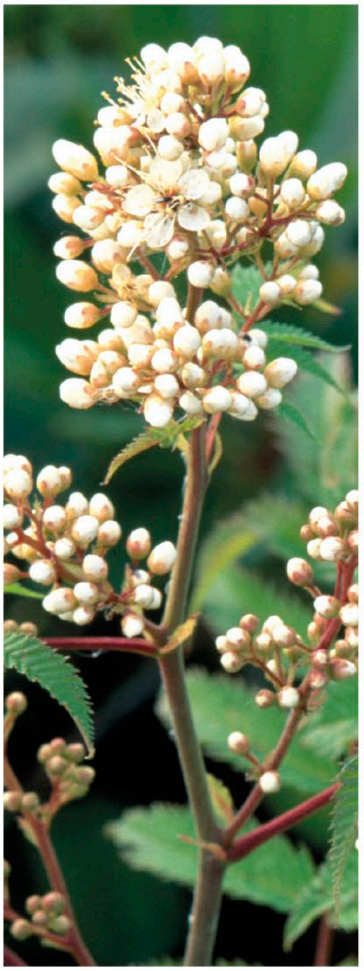


☼ ◖ Z5–8

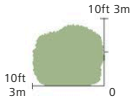
Osteomeles schweriniae
Deciduous or semievergreen, arching shrub with long, slender shoots. Leaves, consisting of many small leaflets, are dark green. Clusters of small, white flowers in early summer are followed by red, later blue-black, fruits.



☼ ◖ Z7–11

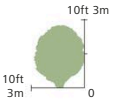


Sorbaria sorbifolia
Deciduous, upright shrub that forms thickets by suckering. Mid-green leaves consist of many sharply toothed leaflets. Large panicles of small, white flowers appear in summer.



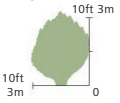
☼ ◖ Z2–8

Styrax wilsonii
Deciduous, bushy shrub with slender shoots that produce an abundance of yellow-centered, white flowers in early summer. Leaves are small and deep green.



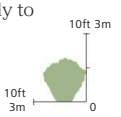
☼ ◖ pH Z7–9

Clethra barbinervis
Deciduous, upright shrub with peeling bark. Has ovate, toothed, dark green leaves that turn red and yellow in fall. Racemes of fragrant, white flowers are borne in late summer and early fall.



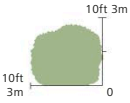
☼ ◖ pH Z5–8

***Philadelphus* 'Dame Blanche'**
Deciduous, bushy, compact shrub with dark, peeling bark. Dark green foliage sets off slightly fragrant, semidouble to loosely double, pure white flowers borne in profusion from early to mid-summer.



☼ ◖ Z5–8

***Philadelphus* 'Virginal'**
Vigorous, deciduous, bushy shrub with spreading shoots and broad, dark green leaves. Produces large racemes of very fragrant, double, white flowers in early to mid-summer.



☼ ◖ Z5–8

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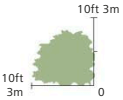
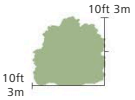
Escallonia virgata
Deciduous, spreading, graceful shrub with arching shoots and small, glossy, dark green leaves. Bears racemes of small, open cup-shaped, white flowers from early to midsummer.



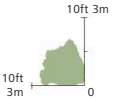
☼ 💧Z8–9

***Viburnum* 'Pragense'**
Evergreen, rounded, bushy shrub that has dark green foliage and domed heads of white flowers opening from pink buds in late spring and early summer.



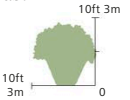
☼ 💧Z6–8 ⓘ

Olearia* x *haastii (Daisy bush)
Evergreen, bushy, dense shrub, good for hedging. Has small, ovate, glossy, dark green leaves and is covered with heads of fragrant, daisylike, white flowers from mid- to late summer.

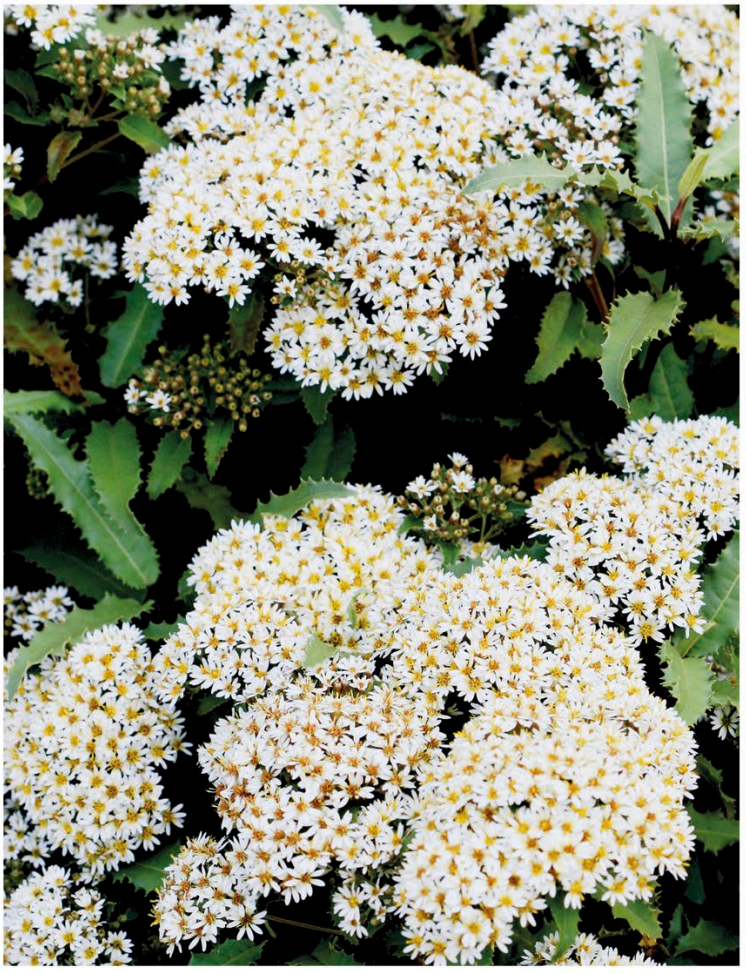


☼ 💧Z9–10

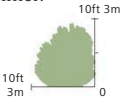
Colletia hystrix
Almost leafless, arching, stoutly branched shrub armed with rigid, gray-green spines. Pink flower buds open in late summer to fragrant, tubular, white blooms that last into fall.



☼ 💧Z7–11

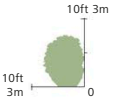


Olearia ilicifolia (Mountain holly)
Evergreen, bushy, dense shrub with narrowly oblong, rigid, sharply toothed, musk-scented, gray-green leaves. Fragrant, white flower heads are borne in clusters in summer.



☼ 💧Z8–10

Zenobia pulverulenta
Deciduous or semievergreen, slightly arching shrub, often with bluish-white bloomed shoots. Glossy leaves have a bluish-white reverse when young. Bears fragrant, bell-shaped, white flowers from early to midsummer.



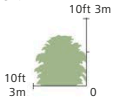
◐ pH Z5–8

Colletia paradoxa
Deciduous, arching shrub with stiff branches and stout, flattened, blue-green spines. Fragrant, tubular, white flowers are borne in late summer and early fall.

☼ 💧Z7–11

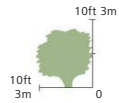
***Spiraea nipponica* 'Snowmound'**
Deciduous, spreading shrub with stout, arching, reddish branches. Small, narrow, dark green leaves set off profuse, dense clusters of small, white flowers in early summer.

☼ 💧Z4–8



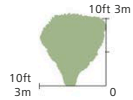
***Philadelphus coronarius* 'Variegatus'**
Deciduous, bushy shrub with racemes of very fragrant, creamy-white flowers in late spring and early summer and mid-green leaves broadly edged with white.

☼ 💧Z4–9



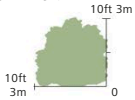
Lonicera xylosteum (Fly honeysuckle)
Deciduous, upright, bushy, dense shrub. Creamy-white, tubular flowers are produced amid gray-green leaves in late spring and early summer, and are followed by red berries.

☼ 💧Z4–9 ⓘ



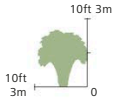
Olearia* x *scilloniensis
Evergreen, upright, then rounded, dense shrub. Narrowly oblong, wavy-margined, gray-green leaves set off numerous white flower heads in late spring and early summer.

☼ 💧Z9–10



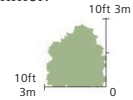
Philadelphus delavayi* f. *melanocalyx
Deciduous, upright shrub, grown for its extremely fragrant flowers, with pure white petals and deep purple sepals, opening from early to midsummer. Leaves are dark green.

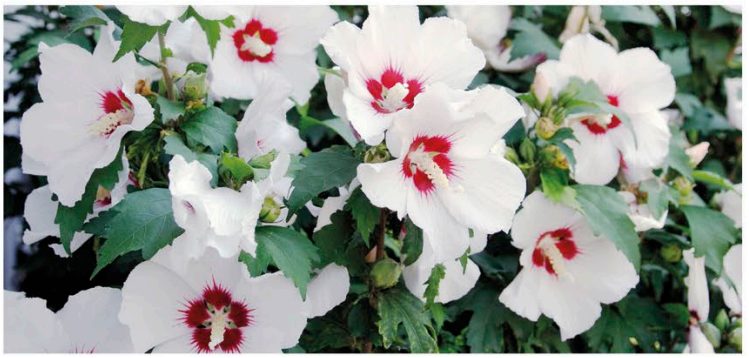
☼ 💧Z6–9



***Escallonia* 'Donard Seedling'**
Vigorous, evergreen, arching shrub with small, glossy, dark green leaves. Masses of pink flower buds open to white blooms, flushed with pale pink, from early to midsummer.

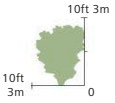
☼ 💧Z8–9





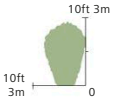
***Hibiscus syriacus* 'Red Heart'**
Deciduous, upright shrub that bears large, white flowers, with conspicuous red centers, from late summer to midfall. Ovate leaves are lobed and deep green.

☼ 💧Z5–9



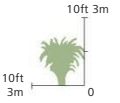
***Deutzia* x *magnifica* 'Staphyleoides'**
Vigorous, deciduous, upright shrub. Large, 5-petaled, pure white blooms, borne in dense clusters in early summer, have recurved petals. Leaves are bright green.

☼ 💧Z6–8



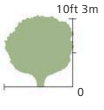
***Yucca gloriosa* (Spanish dagger)**
Evergreen shrub with a sturdy stem crowned with a tuft of long, pointed, deep green leaves, blue-green when young. Bears very long panicles of bell-shaped, white flowers in summer–fall.

☼ 💧Z7–11



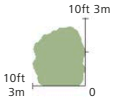
Stephanandra tanakae
Deciduous, arching shrub with orange-brown shoots and sharply toothed, mid-green leaves that turn orange and yellow in fall. Small, yellow-green buds open to white flowers from early to mid-summer.

☼ 💧Z6–8



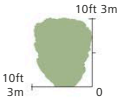
Olearia macrodonta
Vigorous, evergreen, upright shrub, often treelike. Has holly-shaped, sharply toothed, gray-green leaves, silvery-white beneath. Large heads of fragrant, white flowers are produced in early summer.

☼ 💧Z9–10



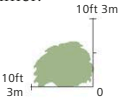
***Aloysia triphylla* (Lemon verbena)**
Deciduous, bushy shrub. Leaves are pale green and lemon-scented. Racemes of tiny, lilac-tinged, white flowers appear in early summer.

☼ 💧Z8–11

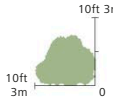


***Exochorda* x *macrantha* 'The Bride'**
Deciduous, arching, dense shrub that forms a mound of pendent branches. Large, white flowers are produced in abundance amid dark green foliage in late spring and early summer.

☼ 💧Z5–9

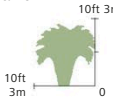


***Escallonia* 'Apple Blossom'**
Evergreen, bushy, dense shrub. From early to mid-summer, apple-blossom-pink flowers are borne in profusion amid glossy, dark green leaves.



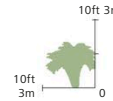
Z8–9

Robinia hispida (Rose acacia)
Deciduous shrub of loose habit with brittle, bristly stems that carry dark green leaves composed of 7–13 leaflets. Pendent racemes of deep rose-pink blooms open in late spring and early summer.



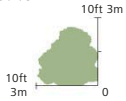
Z6–11 ⓘ

Indigofera heterantha
Deciduous, slightly arching shrub. Has grayish-green leaves consisting of many small leaflets and spikes of small, purplish-pink flowers from early summer to early fall.



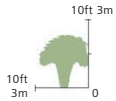
Z6–9

Lonicera tatarica
Deciduous, bushy, upright shrub with dark green foliage. Bears tubular, 5-lobed, white, pink or red flowers along the shoots in late spring and early summer, followed by scarlet to yellow-orange berries.



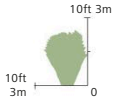
Z3–8 ⓘ

Neillia thibetica
Deciduous, arching shrub. Slender spikes of rose-pink flowers are borne profusely in late spring and early summer. Leaves are sharply toothed.



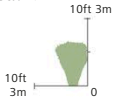
Z6–9

***Deutzia longifolia* 'Veitchii'**
Deciduous, arching shrub with narrow, pointed leaves and large clusters of 5-petaled, deep pink flowers from early to mid-summer.



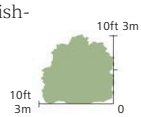
Z7–8

Lavatera assurgentiflora
Semievergreen shrub with twisted, gray stems. Clusters of hollyhocklike, darkly veined, deep cerise blooms open in midsummer. Palmate, mid-green leaves are white-haired beneath.



Z9–10

***Hydrangea aspera* Villosa Group**
Deciduous, upright shrub with peeling bark. From late summer to midfall, produces heads of small, blue or purple, central flowers and larger, white, sometimes flushed purplish-pink, outer ones.



Z7–9

HYDRANGEAS

Valued for their late summer flowers, hydrangeas are versatile shrubs that thrive in a variety of situations. Larger-growing species, some of which may become treelike with age, are suitable for light woodland, while the range of cultivars, mostly of *H. macrophylla*, are excellent border plants. Some may also be grown in containers. Colors range from white through pink, red, and purple to blue. The truest blue is obtained only on acidic soil. Lacecap hydrangeas have a central corymb of small, fertile flowers surrounded by showy, colored bracts; mopheads (or hortensias) have domed heads of sterile bracts only. *H. paniculata* cultivars bear larger though fewer cone-shaped flower heads if pruned hard in spring.

***H. serrata* 'Diadem'**

***H. paniculata* PINKY-WINKY ('Dvppinky')**

***H. heteromalla* 'Snowcap'**

***H.macrophylla* 'Lanarth White'**

***H. involucrata* 'Hortensis'**

***H. macrophylla* 'Altona' ⓘ**

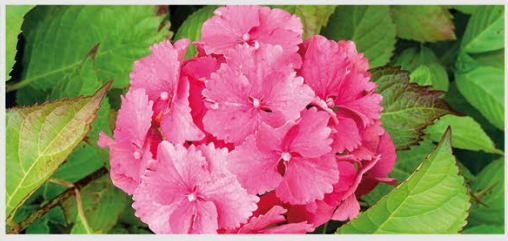
***H. arborescens* 'Grandiflora'**

***H. quercifolia* SNOWFLAKE ('Brido')**

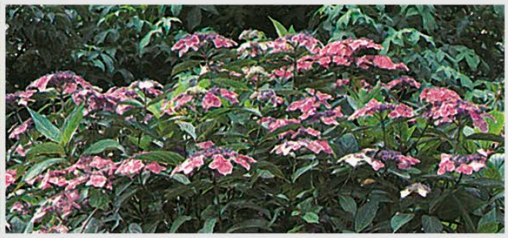
***H. paniculata* 'Big Ben'**

***H. paniculata* 'Phantom'**

***H. paniculata* 'Silver Dollar'**



***H. macrophylla* 'Hamburg' ⓘ**



***H. macrophylla* 'Mariesii Lilacina' ⓘ**

H. paniculata 'Dharuma'

H. macrophylla 'Europa'

H. quercifolia SNOW QUEEN ('Flemygea') ⓘ

H. serrata 'Kiyosumi'

H. aspera 'Mauvette'

H. macrophylla 'Libelle'

H. serrata 'Bluebird' ⓘ

H. serrata 'Grayswood'

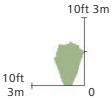
H. paniculata PINK DIAMOND ('Interhydia') ⓘ

H. aspera subsp. *sargentiana*

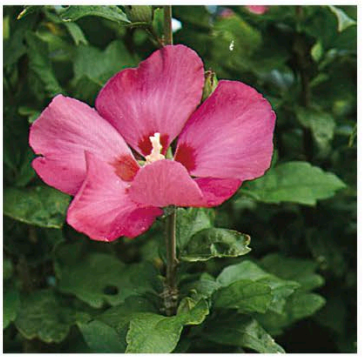
H. paniculata 'Limelight'

PINK

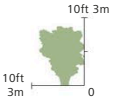
***Lavatera* x *clementii* 'Rosea'**
Semievergreen, erect shrub that produces abundant clusters of hollyhocklike, deep pink flowers throughout summer. Has lobed, sage-green leaves.



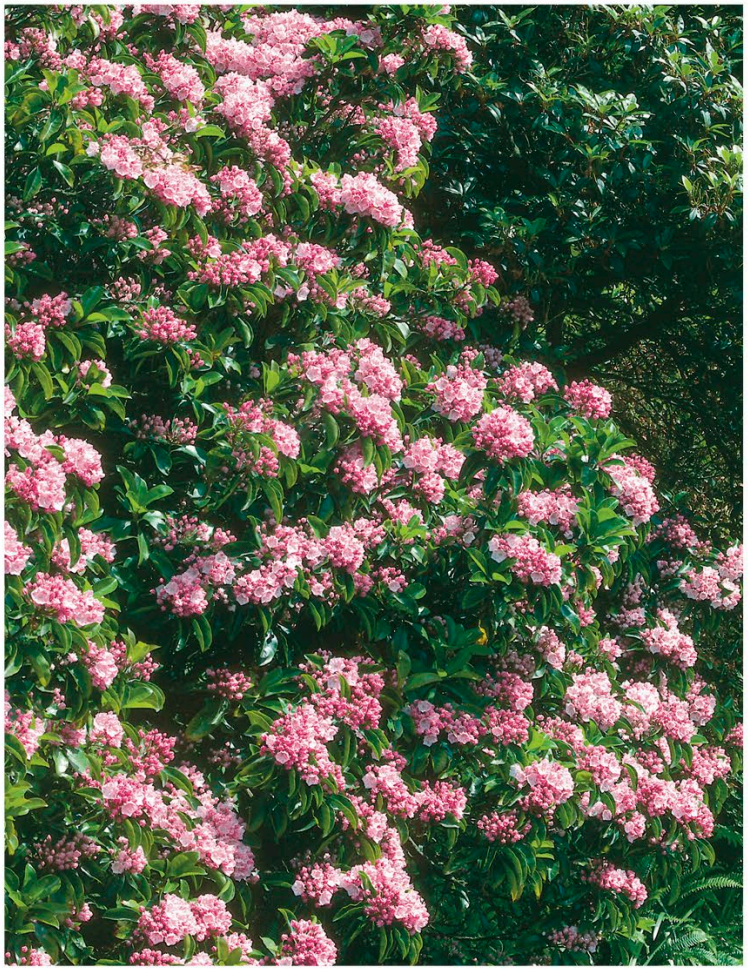
☼ 💧Z10–11



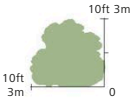
***Hibiscus syriacus* 'Woodbridge'**
Deciduous, upright shrub. From late summer to mid-fall large, reddish-pink flowers, with deeper-colored centers, are borne amid lobed, dark green leaves.



☼ 💧Z5–9



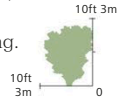
Kalmia latifolia (Calico bush)
Evergreen, bushy, dense shrub. In early summer, large clusters of pink flowers open from distinctively crimped buds amid glossy, rich green foliage.



☼ 💧 pH Z5–9 ⓘ

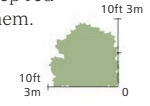
RED

Paeonia delavayi (Tree peony)
Deciduous, upright, open, suckering shrub. Leaves are divided into pointed-ovate leaflets, often with reddish stalks. Produces bowl-shaped, red, orange, yellow, or white flowers, 2–2½in (5–6cm) across, with leafy bracts beneath, in late spring.



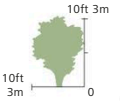
☼ 💧Z4–8

Lonicera ledebourii
Deciduous, bushy shrub. Red-tinged, orange-yellow flowers are borne amid dark green foliage in late spring and early summer, and are followed by black fruits. As these ripen, deep red bracts enlarge around them.



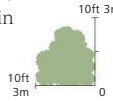
☼ 💧Z5–9 ⓘ

Erythrina* x *bidwillii
Deciduous, upright shrub with pale to mid-green leaves divided into 3 leaflets, up to 4in (10cm) long. Racemes of bright red flowers are borne in late summer or fall. Min. 41°F (5°C).



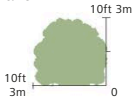
☼ 💧Z11

***Pieris formosa* var. *forrestii* 'Wakehurst'**
Evergreen, bushy, dense shrub. Young leaves are brilliant red in early summer, becoming pink, creamy-yellow, and finally dark green. Bears urn-shaped, white flowers in spring–summer.



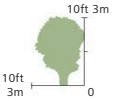
☼ ◑ pH Z6–9 ⓘ

Calycanthus occidentalis
(California allspice)
Deciduous, bushy shrub. Leaves are large, aromatic, and dark green. Fragrant, purplish-red flowers with many strap-shaped petals are borne in summer.



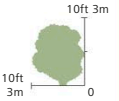
☼ ◑ Z6–9

Erythrina crista-galli
(Cockspur coral-tree)
Deciduous, mainly upright shrub or small tree. Leaves have 3 ovate leaflets. Bears leafy racemes of crimson flowers in summer-fall. Dies back to ground level in winter in cold areas.



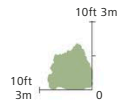
☼ ◊ Z11

Telopea speciosissima (Waratah)
Evergreen, erect, fairly bushy shrub with coarsely serrated leaves. Bears tubular, red flowers in dense, globose heads, surrounded by bright red bracts, in spring–summer.



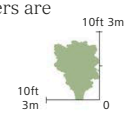
☼ ◊ pH Z10–15

***Berberis thunbergii* 'Rose Glow'**
Vigorous, deciduous, dense shrub with spines. Broadly ovate leaves are rich red-purple mottled with pink and cream when young, maturing to burgundy-red in fall. Bears small, red-tinged, yellow flowers in spring.



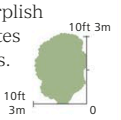
☼ ◊ Z5–8

***Abutilon* 'Ashford Red'**
Strong-growing, evergreen, erect to spreading shrub with maple- to heart-shaped, serrated, pale to mid-green leaves. Pendent, bell-shaped, crimson flowers are borne from spring to fall.



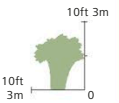
☼ ◊ Z9–10

***Camellia japonica* 'Mathotiana'**
Evergreen, spreading shrub with lance-shaped to ovate, slightly twisted, dark green leaves. Very large, formal double, velvety, dark crimson flowers in spring–summer become purplish with age and in warm climates often have rose-form centers.



◑ ◊ pH Z7–8

Callistemon rigidus (Stiff bottlebrush)
Evergreen, bushy, slightly arching shrub with long, narrow, sharply pointed, dark green leaves and dense spikes of deep red flowers in late spring and early summer.



☼ ◊ Z10–11

PURPLE

***Acer palmatum* 'Bloodgood'**
Deciduous, bushy-headed shrub or small tree with deep reddish-purple leaves that turn brilliant red in fall. Small, reddish-purple flowers in midspring are often followed by decorative, winged, red fruits.

☼ 💧Z6–8

***Abutilon* x *suntense* 'Violetta'**
Fast-growing, deciduous, upright, arching shrub that carries an abundance of large, bowl-shaped, deep violet flowers in late spring and early summer. Vinelike leaves are sharply toothed and dark green.

☼ 💧Z12–15

Prostanthera rotundifolia
(Roundleaf mint bush)
Evergreen, bushy, rounded shrub with tiny, sweetly aromatic, deep green leaves and short, leafy racemes of bell-shaped, lavender to purple-blue flowers in late spring or summer.

☼ 💧Z11

BLUE

Ceanothus impressus
Evergreen, bushy shrub. Spreading growth is covered with small, crinkled, dark green leaves. Deep blue flowers appear in small clusters from midspring to early summer.

☼ 💧Z8–11

***Hibiscus syriacus* 'Oiseau Bleu'**
Deciduous, upright shrub that carries large, red-centered, lilac-blue flowers from late summer to midfall. Has lobed, deep green leaves.

☼ 💧Z5–9

***Ceanothus* 'Concha'**
Dense, evergreen shrub with arching branches and finely toothed, dark green leaves. Numerous, rounded clusters of dark blue flowers open from reddish-purple buds in late spring.

☼ 💧Z7–10

Sophora davidii
Deciduous, bushy shrub with arching shoots. Produces short racemes of small, pealike, purple and white flowers in late spring and early summer. Gray-green leaves have many leaflets.

☼ 💧Z6–9 ⓘ

***Ceanothus* 'Autumnal Blue'**
Fast-growing, evergreen, bushy shrub. Has glossy, bright green foliage and large panicles of pale to mid-blue flowers from late spring to fall.

☼ 💧Z9–10

GREEN

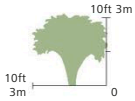
Eleutherococcus sieboldianus
Deciduous, bushy, elegant shrub. Has glossy, bright green leaves, divided into 5 leaflets, and is armed with spines. Clusters of small, greenish flowers appear in early summer.

☼ 💧Z4–8

***Ptelea trifoliata* 'Aurea'**
Deciduous, bushy, dense shrub or low tree. Leaves, consisting of 3 leaflets, are bright yellow when young, maturing to pale green. Bears racemes of greenish flowers in summer, followed by winged, green fruits.

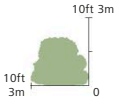
☼ 💧Z5–9

Callistemon pallidus
Evergreen, arching shrub. Gray-green foliage is pink-tinged when young and in early summer is covered with dense spikes of creamy-yellow flowers that resemble bottlebrushes.



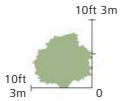
☼ 💧Z10–11

Bupleurum fruticosum
(Shrubby hare's ear)
Evergreen, bushy shrub with slender shoots. From midsummer to early fall, rounded heads of small, yellow flowers are borne amid glossy, dark bluish-green foliage.



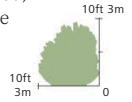
☼ 💧Z7–11

Jasminum humile (Yellow jasmine)
Evergreen, bushy shrub that bears bright yellow flowers on long, slender, green shoots from early spring to late fall. Leaves, with 5 or 7 leaflets, are bright green.



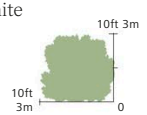
☼ 💧Z7–9

***Sambucus racemosa* 'Plumosa Aurea'**
Slow-growing, deciduous, bushy shrub with leaves made up of 5 ovate leaflets, each deeply cut. Leaves are bronze when young, maturing to golden-yellow in early summer. Star-shaped, yellow flowers in spring are followed by scarlet fruits.



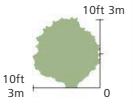
☼ 💧Z3–7

***Elaeagnus* x *submacrophylla* 'Limelight'**
Evergreen, bushy, dense shrub with glossy, dark green leaves, silver beneath, centrally marked yellow and pale green. Bears small, fragrant, white flowers in fall.



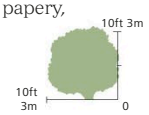
☼ 💧Z7–11

Colutea arborescens (Bladder senna)
Fast-growing, deciduous, open shrub. Has pale green leaves with many leaflets, pealike, yellow flowers throughout summer, and bladderlike seed pods in late summer and fall.



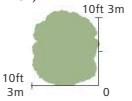
☼ 💧Z6–8 ⓘ

Colutea* x *media
Vigorous, deciduous, open shrub. Gray-green leaves have many leaflets. Racemes of yellow flowers, tinged with copper-orange, appear in summer, followed by bladderlike, papery, red-tinged seed pods.



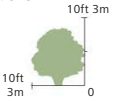
☼ 💧Z6–8 ⓘ

***Euonymus hamiltonianus* subsp. *sieboldianus* 'Red Elf'**
Deciduous, upright shrub with mid- to dark green foliage. Decorative, deep pink fruits, borne in profusion after tiny, green flowers in early summer, open in fall to reveal red seeds.

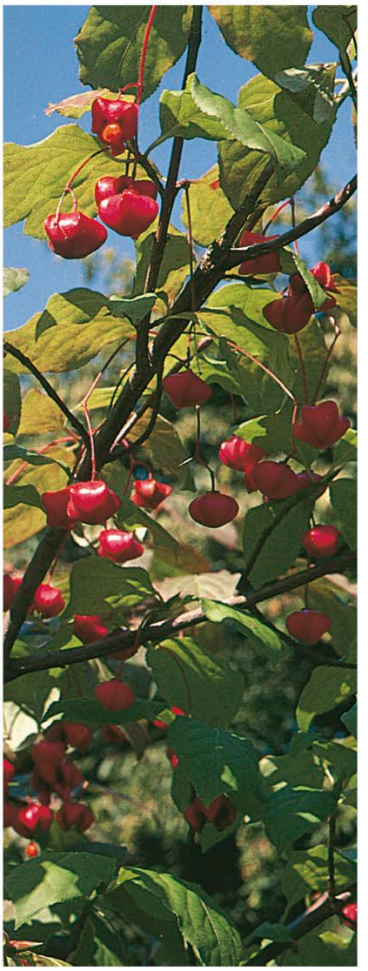


☼ 💧Z6–8 ⓘ

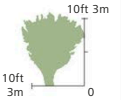
***Euonymus europaeus* 'Red Cascade'**
Deciduous, bushy shrub or small tree with narrowly ovate, mid-green leaves that redden in fall as red fruits open to show orange seeds. Has inconspicuous, greenish flowers in early summer.



☼ 💧Z4–7 ⓘ

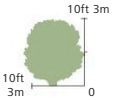


Euonymus latifolius
Deciduous, open shrub. Mid-green foliage turns brilliant red in late fall. At the same time, large, deep red fruits with prominent wings open to reveal orange seeds.



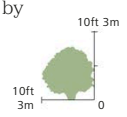
☼ 💧Z7–9 ⓘ

***Ligustrum* x *ovalifolium* 'Vicaryi'**
Semievergreen, bushy, dense shrub with broad, ovate, golden-yellow leaves. Dense racemes of small, white flowers appear in midsummer.



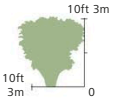
☼ 💧Z4–8 ⓘ

Rhus glabra (Smooth sumac)
Deciduous, bushy shrub with bluish-white-bloomed, reddish-purple stems. Deep blue-green leaves turn red in fall. Bears panicles of greenish-red flower heads in summer, followed by red fruits on female plants.



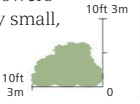
☼ 💧Z2–8

Spartium junceum (Spanish broom)
Deciduous, almost leafless, upright shrub that arches with age. Fragrant, pealike, golden-yellow flowers appear from early summer to early fall on dark green shoots.



☼ 💧Z8–11 ⓘ

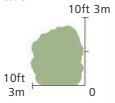
Euonymus alatus (Burning bush, winged spindle)
Deciduous, bushy, dense shrub with shoots that develop corky wings. Dark green leaves turn brilliant red in fall. Inconspicuous, greenish flowers in summer are followed by small, purple-red fruits.



☼ 💧Z4–9 ⓘ

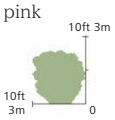
RED/PURPLE

Disanthus cercidifolius
Deciduous, rounded shrub with broadly ovate to almost circular, bluish-green leaves that turn yellow, orange, red, or purple in fall. Has small, dark red flowers in fall as the leaves drop, or later.



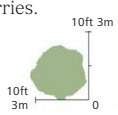
☼ ◖ pH Z5–8

Clerodendrum bungei
Evergreen or deciduous, upright, suckering shrub or subshrub with heart-shaped, coarsely serrated leaves. Has domed clusters of small, fragrant, red-purple to deep pink flowers in late summer and early fall.



☼ ◖ Z8–10

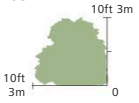
Callicarpa bodinieri* var. *giraldii
(Beautyberry)
Deciduous, bushy shrub. Leaves are pale green, often bronze-tinged when young. Tiny, lilac flowers in midsummer are followed by small, violet berries.



☼ ◖ Z5–8

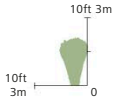
ORANGE

***Pyracantha* 'Golden Charmer'**
Evergreen, bushy, arching, spiny shrub with glossy, bright green leaves. Flattish clusters of white flowers in early summer are succeeded by large, bright orange-yellow berries in early fall.



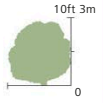
☼ ◖ Z7–9 ⓘ

Leonotis leonurus (Lion's ear)
Semievergreen or deciduous, sparingly branched, erect shrub or subshrub. Has lance-shaped leaves and whorls of tubular, bright orange-red flowers in late fall and early winter.



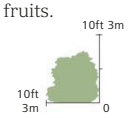
☼ ◖ Z8–11

Zanthoxylum simulans
Deciduous, bushy shrub or small tree with sturdy spines. Aromatic, glossy, bright green leaves consist of 5 leaflets. Tiny, yellowish-green flowers in late spring and early summer are followed by orange-red fruits.



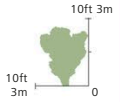
☼ ◖ Z6–9

***Berberis* x *carminea* 'Barbarossa'**
Semievergreen, arching shrub. Has narrowly ovate, dark green leaves and racemes of rounded, yellow flowers in late spring and early summer, followed by globose, orange-scarlet fruits.



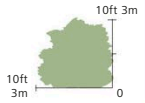
☼ ◖ Z6–9 ⓘ

Colquhounia coccinea
Evergreen or semievergreen, open shrub. Has aromatic, sage-green leaves and whorls of scarlet or orange flowers in late summer and fall.



☼ ◖ Z8–9

Cotoneaster sternianus
Evergreen or semievergreen, arching shrub. Leaves are gray-green, white beneath. Pink-tinged, white flowers in early summer are followed by orange-red fruits.



☼ ◖ Z7–9 ⓘ

SHRUBS FOR BERRIES

Most plants produce seeds in one form or another, but fruits and berries offer the best decorative value. Shrubs, in particular, offer a huge variety of berries in a range of colors, shapes and sizes. Most appear from summer to late fall, with many enduring well into winter, brightening up the garden when color is in short supply, and providing an excellent source of nutrition for birds and wildlife. The most popular berried shrubs are cotoneaster, viburnum, and the snowberry (*Symphoricarpos*), with more unusual fruit produced by *Clerodendrum trichotomum* and *Decaisnea fargesii*, among others. Many of these plants are easy to grow, and will thrive in most soils if given an annual application of all-purpose granular fertilizer in spring.

***Cornus alba* 'Sibirica Variegata'**

Citrus trifoliata

***Symphoricarpos albus* var. *laevigatus* ⓘ**

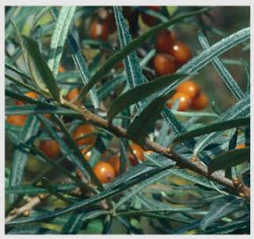
***Euonymus hamiltonianus* subsp. *sieboldianus* ⓘ**

Cotoneaster frigidus

Cotoneaster conspicuus

Cotoneaster salicifolius

***Daphne mezereum* ⓘ**



Hippophae rhamnoides

***Viburnum plicatum* f. *tomentosum* 'Pink Beauty' ⓘ**

Euonymus cornutus

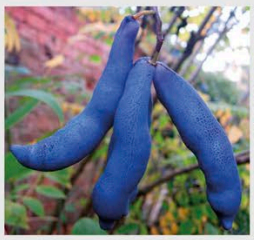
Cornus sanguinea

Aronia arbutifolia

***Viburnum betulifolium* ⓘ**

Clerodendrum trichotomum

***Euonymus hamiltonianus* ⓘ**



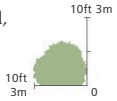
Decaisnea fargesii

Symplocos paniculata

Sarcococca confusa

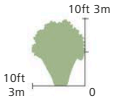
WHITE

***Viburnum tinus* 'Eve Price'**
Evergreen, bushy, very compact shrub with ovate, dark green leaves. In winter–spring, deep pink buds open into flattened heads of small, star-shaped, white flowers, which are followed by ovoid, blue fruits.



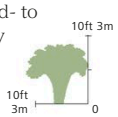
☼ 💧Z8–10 ⓘ

Viburnum farreri
Deciduous, upright shrub. In late fall and during mild periods in winter and early spring, bears fragrant, white or pale pink flowers. Dark green foliage is bronze when young.



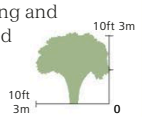
☼ 💧Z6–8 ⓘ

Rubus thibetanus
Deciduous, arching shrub with white-bloomed, brownish-purple, young shoots in winter and fernlike, glossy, dark green foliage, white beneath. Small, pink flowers from mid- to late summer are followed by black fruits.



☼ 💧Z7–9

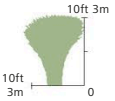
Rubus biflorus
Deciduous, upright shrub with chalky-white, young shoots in winter. Leaves, consisting of 5–7 ovate leaflets, are dark green above, white beneath. White flowers in late spring and early summer are followed by edible, yellow fruits.



☼ 💧Z6–9

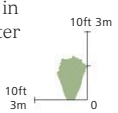
PINK

***Viburnum* x *bodnantense* 'Dawn'**
Deciduous, upright shrub with ovate, bronze, young leaves that mature to dark green. Racemes of deep pink buds open to fragrant, pink flowers during mild periods from late fall to early spring.



☼ 💧Z7–8 ⓘ

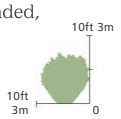
***Daphne bholua* 'Jacqueline Postill'**
Slow-growing, evergreen, upright, compact shrub with ovate, leathery, deep green leaves. Masses of highly fragrant flowers, deep pink in bud opening to white, are borne in terminal clusters in late winter and early spring.



☼ 💧Z7–9 ⓘ

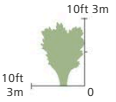
RED

***Cornus alba* 'Sibirica'**
Deciduous, upright shrub with scarlet young shoots in winter. Has dark green foliage and heads of creamy-white flowers in late spring and early summer, succeeded by rounded, white fruits.



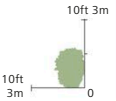
☼ 💧Z2–8 ⓘ

Cotoneaster simonsii
Deciduous or semievergreen, upright shrub, suitable for hedging. Has ovate, glossy, dark green leaves, shallowly cup-shaped, white flowers in early summer, and long-lasting, orange-red fruits in fall.



☼ 💧Z6–8 ⓘ

***Nandina domestica* 'Fire Power'**
Evergreen or semievergreen, elegant, bamboolike, dwarf shrub. Leaves have dark green leaflets, purplish-red when young and in fall–winter. Bears small, white flowers in summer, followed in warm areas by orange-red fruits.

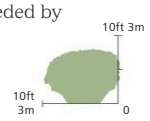


☼ 💧Z6–11

WINTER

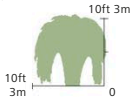
YELLOW

Mahonia japonica
Evergreen, upright shrub with deep green leaves consisting of many spiny leaflets. Long, spreading sprays of fragrant, yellow flowers appear from late fall to spring, succeeded by purple-blue fruits.



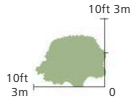
☼ ◐ Z7–8

Jasminum nudiflorum
(Winter jasmine)
Deciduous, arching shrub with ovate, dark green leaves. Bright yellow flowers appear on slender, leafless, green shoots in winter and early spring.

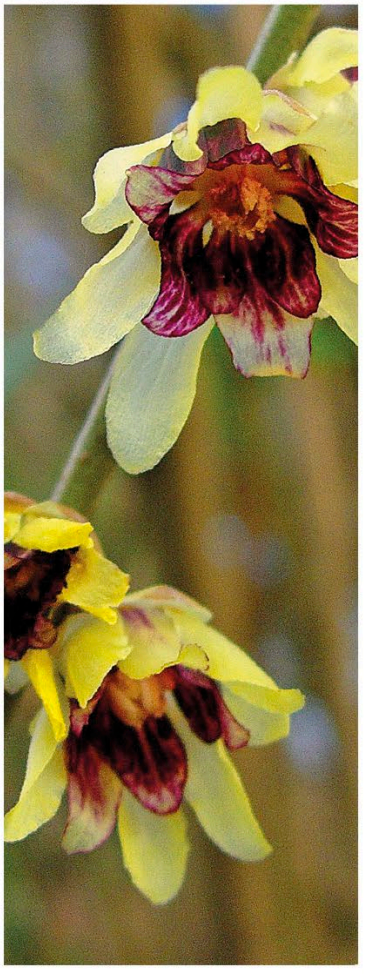


☼ ◊ Z6–9

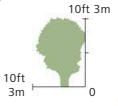
Stachyurus praecox
Deciduous, spreading, open shrub with purplish-red shoots. Drooping spikes of pale greenish-yellow flowers open in late winter and early spring, before pointed, deep green leaves appear.



☼ ◊ pH Z6–8



Chimonanthus praecox (Wintersweet)
Deciduous, bushy shrub with ovate, rough, glossy, dark green leaves. Bears very fragrant, many-petaled, cup-shaped, yellow flowers, with purple centers, on bare branches in mild periods during winter.

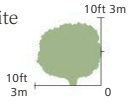


☼ ◊ Z7–9

ALL YEAR

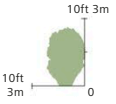
WHITE

***Euonymus japonicus* 'Latifolius Albomarginatus'**
Evergreen, upright, bushy and dense shrub with ovate, dark green leaves broadly edged with white. Produces clusters of insignificant, greenish-white flowers in late spring.



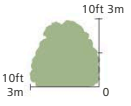
☼ ◊ Z6–9 !

***Euonymus fortunei* 'Silver Queen'**
Evergreen, bushy, sometimes scandent shrub with a dense growth of dark green leaves, broadly edged with white. Produces insignificant, greenish-white flowers in spring.



☼ ◊ Z5–9 !

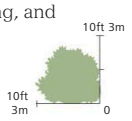
***Fatsia japonica* 'Variegata'**
Evergreen, rounded, bushy and dense shrub with palmate, glossy, dark green leaves, variegated marginally with creamy-white, and large sprays of small, white flowers in fall.



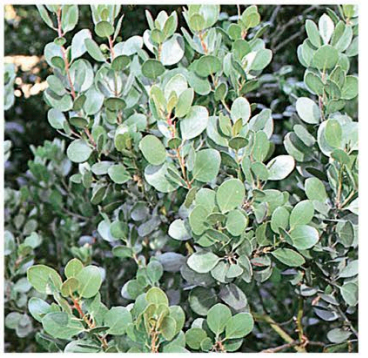
☼ ◊ Z8–10

GREEN

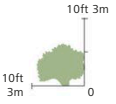
Corokia cotoneaster
(Wire-netting bush)
Evergreen, bushy, open shrub with interlacing shoots. Has small, spoon-shaped, dark green leaves, fragrant, yellow flowers in late spring, and red fruits in fall.



☼ ◊ Z9–11

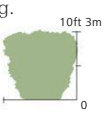


Arctostaphylos patula
Evergreen, rounded shrub with reddish-brown bark and bright gray-green foliage. Urn-shaped, white or pale pink flowers appear from mid- to late spring, followed by brown fruits.



☼ ◊ pH Z6–9

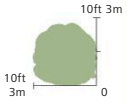
***Buxus sempervirens* 'Handsworthensis'** (Common boxwood)
Vigorous, evergreen, bushy, upright shrub or small tree. Has broad, very dark green leaves. A dense habit makes it ideal for hedging or screening.



☼ ◊ Z6–8 !

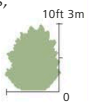
Buxus balearica (Balearic boxwood)
Evergreen, treelike shrub suitable for hedging in mild areas. Has broadly ovate, bright green leaves.

☼ 💧 Z7–9 ❗



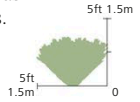
Melianthus major (Honeybush)
Evergreen, sprawling, shrub bearing blue-gray leaves, 10–18in (25–45cm) long, divided into 7–13 ovate, toothed leaflets. Tubular, brownish-red flowers are produced in terminal spikes, 12in (30cm) long, in spring and summer.

☼ 💧 Z8–11



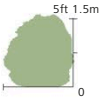
Salix hastata **'Wehrhahnii'**
Deciduous, upright-branched shrub with deep purple stems that contrast with silver-gray catkins borne in early spring before foliage appears. Stems later turn yellow. Has ovate, bright green leaves.

☼ 💧 Z5–8



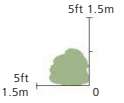
Prunus glandulosa **'Alba Plena'**
Deciduous, open shrub, with narrowly ovate, mid-green leaves, bearing racemes of double, white flowers in late spring.

☼ 💧 Z5–8 ❗



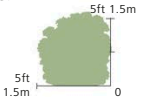
Rhododendron groenlandicum (Labrador tea)
Evergreen, bushy shrub. Foliage is dark green and aromatic. Rounded heads of small, white flowers are carried from midspring to early summer.

☼ 💧 pH Z2–6



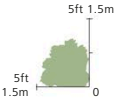
Spiraea **x** ***vanhouttei*** (Bridal wreath)
Deciduous, compact shrub with slender, arching shoots. In late spring and early summer, abundant, small, dense clusters of white flowers appear amid diamond-shaped, dark green leaves.

☼ 💧 Z4–8



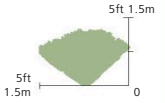
Deutzia gracilis
Deciduous, upright or spreading shrub. Massed, 5-petaled, pure white flowers are borne in upright clusters amid bright green foliage in late spring and early summer.

☼ 💧 Z5–8



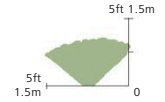
Prunus laurocerasus **'Zabeliana'**
Evergreen, wide-spreading, open shrub. Leaves are very narrow and glossy, dark green. Spikes of white flowers in late spring are followed by cherrylike, red, then black, fruits.

☼ 💧 Z6–9 ❗



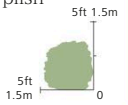
Prunus laurocerasus **'Otto Luyken'**
Evergreen, very dense shrub. Has upright, narrow, glossy, dark green leaves, and spikes of white flowers in late spring, followed by cherrylike, red then black fruits.

☼ 💧 Z6–9 ❗



Gaultheria **x** ***wisleyensis*** **'Wisley Pearl'**
Evergreen, bushy, dense shrub with ovate, deeply veined, dark green leaves. Bears small, white flowers in late spring and early summer, then purplish-red fruits.

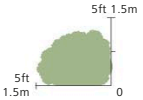
☼ 💧 pH Z7–9 ❗



WHITE

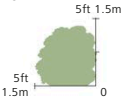
Viburnum* x *juddii
Deciduous, rounded, bushy shrub with dark green foliage. Rounded heads of very fragrant, pink-tinged, white flowers open from pink buds from mid- to late spring.

☼ 💧Z5–9 ❗



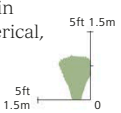
Viburnum carlesii
Deciduous, bushy, dense shrub with dark green leaves that redden in fall. Rounded heads of very fragrant, white and pink flowers, pink in bud, appear from mid- to late spring, followed by decorative, black fruits.

☼ 💧Z5–8 ❗



***Chaenomeles speciosa* 'Snow'**
Slow-growing, deciduous shrub forming a dense framework of interlacing, spiny branches. Has ovate, toothed, dark green leaves. Saucer-shaped, pure white flowers, 1½in (4cm) across, in spring are followed by spherical, edible, yellow fruits.

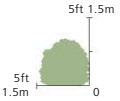
☼ 💧Z5–9



PINK

Deutzia* x *rosea
Deciduous, bushy, dense shrub. In late spring and early summer, produces massed, broad clusters of 5-petaled, pale pink flowers. Leaves are ovate and dark green.

☼ 💧Z6–8

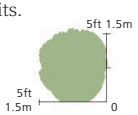


***Daphne* x *burkwoodii* 'Somerset'**
Semievergreen, upright shrub that bears dense clusters of very fragrant, white and pink flowers in late spring, and sometimes again in fall. Leaves are lance-shaped and pale to mid-green.

☼ 💧Z4–7 ❗

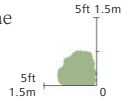
Prunus* x *cistena
Slow-growing, deciduous, upright shrub with deep reddish-purple leaves, red when young. Small, pinkish-white flowers from mid- to late spring may be followed by purple fruits.

☼ 💧Z3–8 ❗



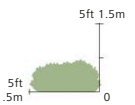
Daphne retusa
Evergreen, densely branched, rounded shrub clothed with leathery, glossy leaves notched at the tips. In late spring and early summer, deep purple buds open to very fragrant, pink-flushed, white flowers borne in terminal clusters.

☼ 💧Z7–9 ❗



Prunus tenella
Deciduous, bushy shrub with upright shoots and narrowly ovate, glossy leaves. Shallowly cup-shaped, bright pink flowers appear from mid- to late spring.

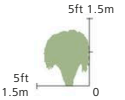
☼ 💧Z6–8 ❗

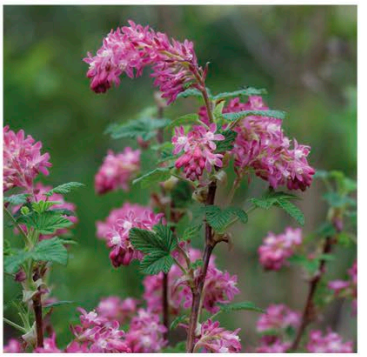


RED

Cantua buxifolia
Evergreen, arching, bushy shrub. Has gray-green foliage and drooping clusters of bright red and magenta flowers from mid- to late spring.

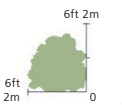
☼ 💧Z10–11





***Ribes sanguineum* 'Koja'**
Deciduous, compact, spineless shrub with lobed, toothed, aromatic, dark green leaves. Pendent racemes of small, rich crimson flowers are borne in spring, followed by white-bloomed, black fruits.

☼ 💧Z6–10



***Chaenomeles* x *superba* 'Rowallane'**
(Flowering quince)
Deciduous, low, spreading shrub. Has glossy, dark green foliage and bears a profusion of large, red flowers during spring.

☼ 💧 Z5–9

***Chaenomeles* x *superba* 'Nicoline'**
(Flowering quince)
Deciduous, bushy, dense shrub. Has glossy, dark green leaves and a profusion of large, scarlet flowers in spring, followed by yellow fruits.

☼ 💧 Z5–9

***Arctostaphylos* 'Emerald Carpet'**
Evergreen shrub that, with a low, dense growth of ovate, bright green leaves and purple-red stems, makes excellent groundcover. Bears small, urn-shaped, white flowers in spring.

☼ 💧 pH Z6–9

Euphorbia characias* subsp. *characias
Evergreen, upright shrub with clusters of narrow, gray-green leaves. During spring and early summer, bears dense spikes of pale yellowish-green flowers with deep purple centers.

☼ 💧 Z7–10 ⓘ

Daphne laureola* subsp. *philippi
Evergreen, dwarf shrub with ovate, dark green leaves. Slightly fragrant, tubular, pale green flowers with short, spreading lobes appear in late winter and early spring, followed by black fruits.

☼ 💧 Z7–8 ⓘ

***Salix lanata* (Woolly willow)**
Deciduous, bushy, dense shrub with sturdy, woolly, gray shoots and broad, silver-gray leaves. Large, yellowish-green catkins appear in late spring with foliage.

☼ 💧 Z3–5

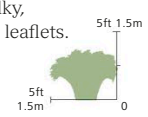
***Salix repens* (Creeping willow)**
Deciduous, prostrate or semi-upright and bushy shrub. Silky, gray catkins become yellow from mid- to late spring, before small, narrowly ovate leaves, which are gray-green above, silvery beneath, appear.

☼ 💧 Z5–7

Euphorbia characias* subsp. *wulfenii
Evergreen, upright shrub. Stems are biennial, producing clustered, gray-green leaves one year and spikes of yellow-green blooms the following spring.

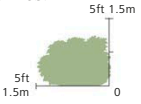
☼ 💧 Z7–10 ⓘ

***Cytisus* x *praecox* 'Warminster'** (Warminster broom)
Deciduous, densely branched shrub. From mid- to late spring, pealike, creamy-yellow flowers are borne in profusion amid tiny, silky, gray-green leaves with 3 leaflets.



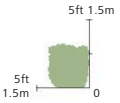
☼ 💧 Z6–9 ❗

Mahonia aquifolium (Oregon grape)
Evergreen, open shrub. Leaves, with glossy, bright green leaflets, often turn red or purple in winter. Bunches of small, yellow flowers in spring are followed by blue-black berries.



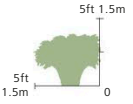
☼ 💧 Z6–9

***Caragana arborescens* 'Nana'**
Deciduous, bushy, dwarf shrub with mid-green leaves consisting of many ovate leaflets. Pealike, yellow flowers are borne in late spring.



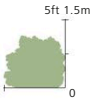
☼ 💧 Z2–8

***Cytisus* x *praecox* 'Allgold'** (Broom)
Deciduous, densely branched shrub with silky, gray-green leaves, divided into 3 leaflets, and a profusion of pealike, yellow flowers from mid- to late spring.



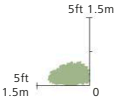
☼ 💧 Z6–9 ❗

Ulex europaeus (Gorse)
Leafless or almost leafless, bushy shrub with year-round, dark green shoots and spines that make it appear evergreen. Bears massed, fragrant, pealike, yellow flowers in spring.



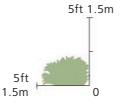
☼ 💧 pH Z6–8 ❗

Berberis empetrifolia
Evergreen, arching, prickly shrub with narrow, gray-green leaves. Globose, golden-yellow flowers are borne in late spring, followed by black fruits in fall.



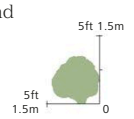
☼ 💧 Z7–9 ❗

Genista tinctoria (Dyers' greenweed)
Deciduous, spreading, dwarf shrub that bears dense spires of pealike, golden-yellow flowers in spring and summer. Leaves are narrow and dark green.



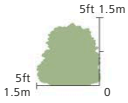
☼ 💧 Z2–8

***Choisya ternata* SUNDANCE ('Lich')**
Evergreen, rounded, dense shrub with aromatic, glossy, bright yellow leaves divided into 3 oblong leaflets. Fragrant, star-shaped, white flowers are produced in clusters in late spring and often again in fall.



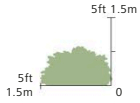
☼ 💧 Z8–10

Deutzia monbeigii
Deciduous, arching, elegant shrub. Clusters of small, 5-petaled, white flowers appear in profusion among small, dark green leaves from early- to midsummer.



☼ 💧Z6–8

***Philadelphus* 'Manteau d'Hermine'**
Deciduous, bushy, compact shrub. Clusters of fragrant, double, creamy-white flowers are borne amid small, pale to mid-green leaves from early to midsummer.

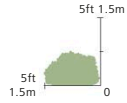


☼ 💧Z5–8

Rhodotypos scandens
Deciduous, upright or slightly arching shrub. In late spring and early summer, amid sharply toothed leaves, bears shallowly cupped, white flowers, followed by small, pea-shaped, black fruits.

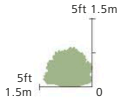
☼ 💧Z5–8

***Potentilla fruticosa* 'Abbotswood'**
Deciduous, bushy shrub. Large, pure white flowers are borne amid dark blue-green leaves, divided into 5 narrowly ovate leaflets, throughout summer–fall.



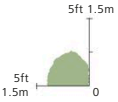
☼ 💧Z3–7

***Hebe* 'White Gem'**
Evergreen, rounded shrub that produces a dense mound of small, glossy leaves covered in early summer with tight racemes of small, white flowers.



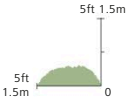
☼ 💧Z8–10

Convolvulus cneorum
Evergreen, rounded, bushy, dense shrub. Pink-tinged buds opening to white flowers with yellow centers are borne from late spring to late summer among narrow, silky, silvery-green leaves.

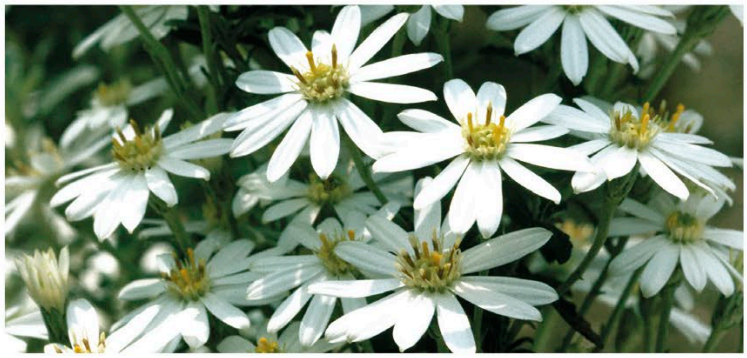


☼ 💧Z8–11

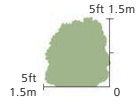
x *Halimiocistus sahucii*
Evergreen, bushy, dense shrub with narrow, dark green leaves that set off an abundance of pure white flowers in late spring and early summer.



☼ 💧Z7–9



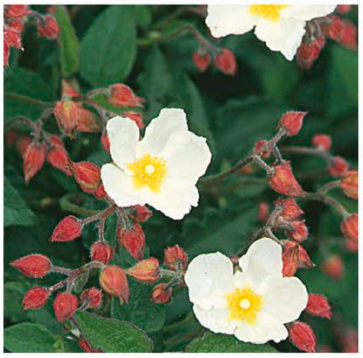
Olearia phlogopappa* var. *subrepanda
Evergreen, upright, compact shrub. Heads of daisylike, white flowers are borne profusely from mid-spring to early summer amid narrow, toothed, gray-green leaves.



☼ 💧Z7–10

Cistus salviifolius
Evergreen, bushy, dense shrub with slightly wrinkled, gray-green foliage. White flowers, with central, yellow blotches, are borne in profusion in early summer.

☼ 💧Z8–11

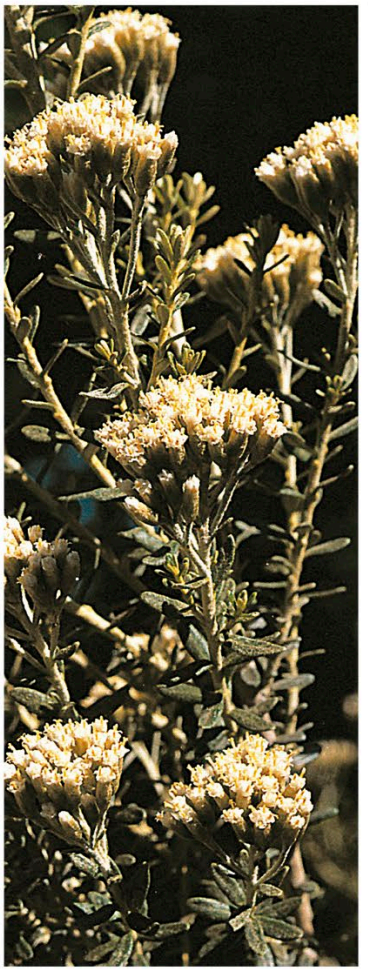


Cistus* x *hybridus (Rock rose)
Evergreen, bushy, dense shrub. Has wrinkled, wavy-edged, dark green leaves and bears a profusion of white flowers, with central, yellow blotches, in late spring and early summer.

☼ 💧Z8–10

Cistus* x *cyprius
Evergreen, bushy shrub with sticky shoots and narrow, glossy, dark green leaves. In early summer, large, white flowers, with a red blotch at each petal base, are borne in succession for some weeks, but last only a day.

☼ 💧Z8–11



Cassinia leptophylla* subsp. *vauvilliersii
Evergreen, upright shrub. Whitish shoots are covered with tiny, dark green leaves and heads of small, white flowers from mid- to late summer.

☼ 💧Z8–9

***Cistus* x *aguilarii* 'Maculatus'**
Evergreen, bushy shrub with narrow, wavy-edged, slightly sticky, rich green leaves. Large, white flowers, with a central, deep red and yellow pattern, are borne from early to midsummer.

☼ 💧Z9–11

Cistus ladanifer
Evergreen, open, upright shrub. Leaves are narrow, dark green, and sticky. Bears large, white flowers, with red markings around the central tuft of stamens, in profusion in early summer.

☼ 💧Z7–10

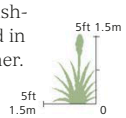
Rhaphiolepis umbellata
Evergreen, bushy shrub with rounded, leathery, dark green leaves and bearing clusters of fragrant, white flowers during early summer.

☼ 💧Z8–11

Vaccinium corymbosum
(Highbush blueberry)
Deciduous, upright, slightly arching shrub. Small, white or pinkish flowers in late spring and early summer are followed by sweet, edible, blue-black berries. Foliage turns red in fall.

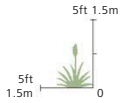
☼ 💧 pH Z3–7

Hesperoyucca whipplei
(Our Lord's candle)
Evergreen, virtually stemless shrub that forms a dense tuft of slender, pointed, blue-green leaves. Very long panicles of fragrant, greenish-white flowers are produced in late spring and early summer.



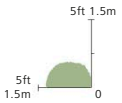
☼ 💧Z7–9

***Yucca flaccida* 'Ivory'**
Evergreen, very short-stemmed shrub that produces tufts of narrow, dark green leaves and long panicles of bell-shaped, white flowers from mid- to late summer.



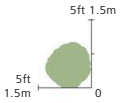
☼ 💧Z5–9

Hebe albicans
Evergreen shrub that forms a dense mound of blue-gray foliage covered with small, tight clusters of white flowers from early to midsummer.



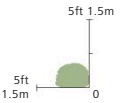
☼ 💧Z9–11

Ozothamnus ledifolius
Evergreen, dense shrub. Yellow shoots are covered with small, aromatic leaves, glossy, dark green above, yellow beneath. Small, white flower heads are borne in early summer.



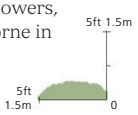
☼ 💧Z8–9

Hebe recurva
Evergreen, open, spreading shrub. Leaves are narrow, curved, and blue-gray. Small spikes of white flowers are produced from mid- to late summer.



☼ 💧Z9–11

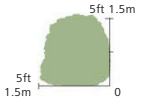
Leptospermum rupestre
Evergreen, semiprostrate, widely arching shrub with reddish shoots and small, dark green leaves that turn bronze-purple in winter. Small, open cup-shaped, white flowers, red-flushed in bud, are borne in early summer.



☼ 💧Z8–11

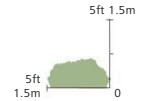
WHITE

***Weigela* 'Nana Variegata'**
Deciduous, bushy, dense shrub. Bears a profusion of funnel-shaped, pink flowers in late spring and early summer, and has mid-green leaves broadly edged with creamy white.



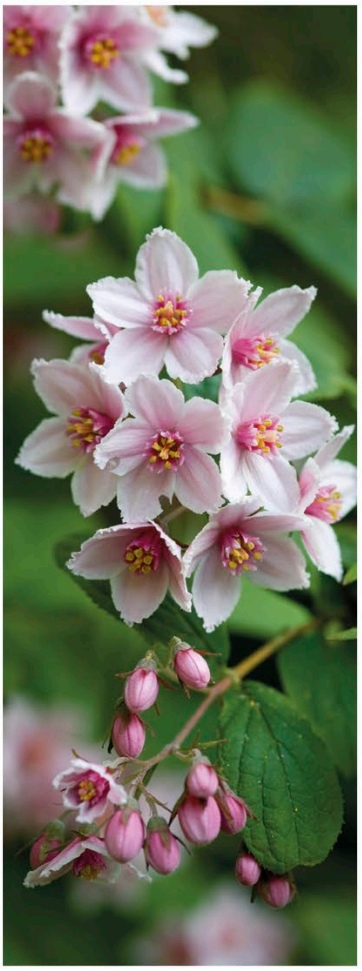
☼ 💧Z5–8

***Coprosma* x *kirkii* 'Variegata'**
Evergreen, densely branched shrub, prostrate when young, later semi-erect. White-margined leaves are borne singly or in small clusters. Tiny, translucent, white fruits appear in fall on female plants if both sexes are grown.

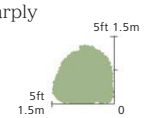


☼ 💧Z8–10

PINK

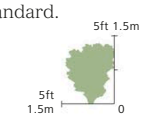


***Deutzia* x *hybrida* 'Mont Rose'**
Deciduous, bushy shrub that produces clusters of pink or pinkish-purple flowers in early summer, with yellow anthers and occasionally white markings. Leaves are sharply toothed and dark green.

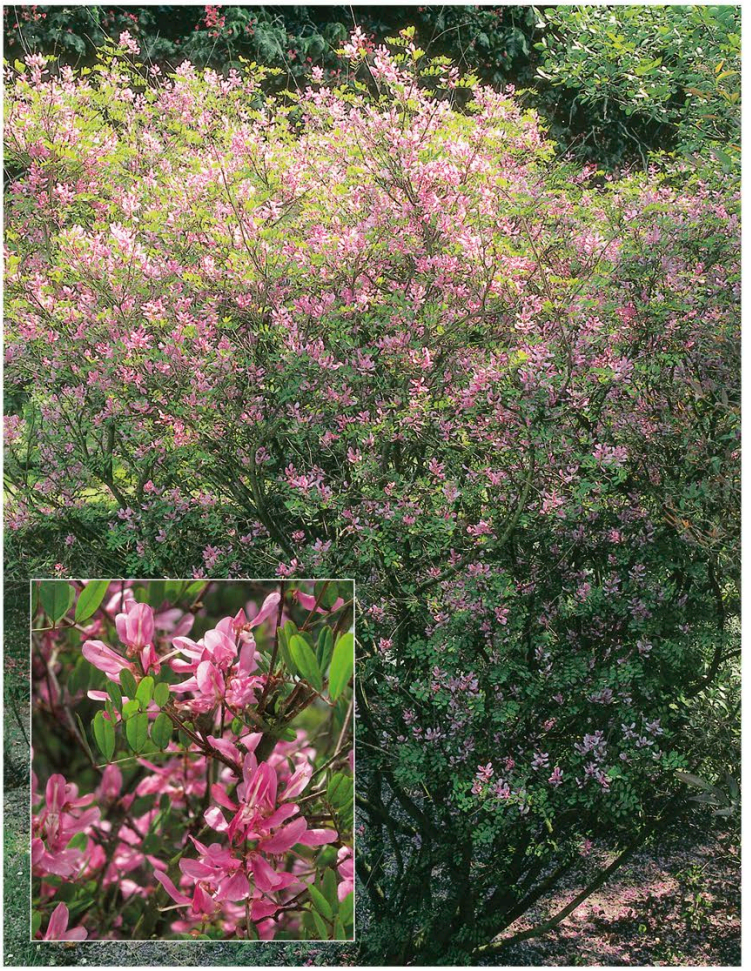


☼ 💧Z6–8

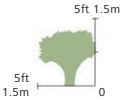
***Fuchsia* 'Lady Thumb'**
Deciduous, upright, dwarf shrub bearing small, semidouble flowers with reddish-pink tubes and sepals, and pink-veined, white petals. May be trained as a miniature standard.



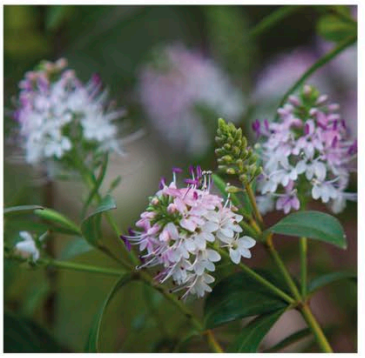
◐ 💧Z9–11



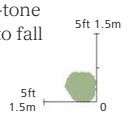
Indigofera himalayensis
Deciduous, upright, open shrub. Dark green leaves consist of 7–11 ovate leaflets. Slender, erect spikes of pale pink flowers are borne from early summer to early fall.



☼ 💧Z6–9

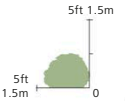


***Hebe* 'Nicola's Blush'**
Dwarf, bushy, rounded, evergreen shrub. Lance-shaped, red-margined, mid-green leaves, flush purple in winter. Bears racemes of magenta-pink flowers that fade to white, giving a two-tone effect, from early summer to fall or early winter.



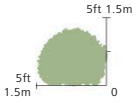
☼ 💧Z8–11

Cistus* x *skanbergii
Evergreen, bushy shrub. A profusion of pale pink flowers are borne amid narrow, gray-green leaves from early to midsummer.



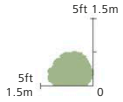
☼ 💧Z9–11

***Deutzia* x *elegantissima* 'Rosealind'**
Deciduous, rounded, bushy, dense shrub that produces clusters of 5-petaled, deep pink flowers from late spring to early summer.



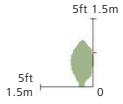
☼ 💧Z6–8

***Cistus* x *argenteus* 'Peggy Sammons'**
Evergreen, bushy shrub with ovate, gray-green leaves. Saucer-shaped, pale purplish-pink flowers are produced freely during early summer.



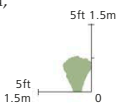
☼ 💧Z9–11

Phlomis italica
Evergreen, upright shrub. In midsummer, whorls of lilac-pink flowers are borne at the ends of shoots amid narrow, woolly, gray-green leaves.



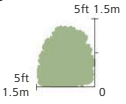
☼ 💧Z9–11

Penstemon isophyllus
Slightly untidy, deciduous shrub or subshrub that, from mid- to late summer, bears long sprays of large, white- and red-throated, deep pink flowers above spear-shaped, glossy, mid-green leaves.



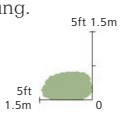
☼ 💧Z8–11

***Hebe* 'Great Orme'**
Evergreen, rounded, open shrub. Has deep purplish shoots and glossy, dark green foliage. Slender spikes of deep pink flowers that fade to white are produced from midsummer to mid-fall.



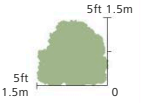
☼ 💧Z9–11

***Spiraea japonica* 'Little Princess'**
Slow-growing, deciduous, mound-forming shrub that produces copious small heads of rose-pink blooms from mid- to late summer. Small, dark green leaves are bronze when young.



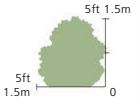
☼ 💧Z4–9

***Ceanothus* x *pallidus* 'Perle Rose'**
Deciduous, bushy shrub that from midsummer to early fall bears dense racemes of bright carmine-pink flowers amid broad, ovate, mid-green leaves.



☼ 💧Z8–11

***Abelia* 'Edward Goucher'**
Deciduous or semievergreen, arching shrub. Ovate, bright green leaves are bronze when young. Bears a profusion of lilac-pink flowers from midsummer to fall.



☼ 💧Z7–9

HARDY FUCHSIAS

With their vivid blooms and long flowering season, hardy fuchsias are outstanding garden shrubs. They flower throughout the summer months, producing an abundance of vibrant, pendant, single to double flowers, with flared or elegantly recurved sepals. These range in color from deep red and purple to soft pink and pure white, and are often bicolored. Unlike tender varieties (*see p.302*), hardy fuchsias can be grown outside all year in full sun or partial shade. They require moist, well-drained soil, and can be grown in large containers.

***F.* 'Madame Cornélissen'**

F. magellanica

***F.* 'Riccartonii'**

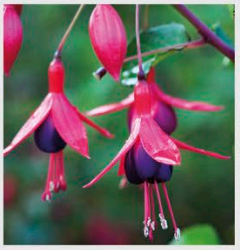
***F.* 'Rufus'**

F. magellanica* var. *gracilis

***F.* 'Mrs Popple'**

***F.* 'Corallina'**

***F. magellanica* 'Thompsonii'**



***F.* 'Howlett's Hardy'**

***F.* 'Tom Thumb'**

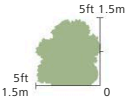
SMALL

SUMMER

PINK

Abelia parvifolia

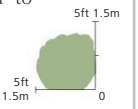
Deciduous, arching shrub. Pointed, mid-green leaves are bronze when young. Yellow-blotched, rose-purple and white flowers are borne from midsummer to mid-fall.



☼ 💧Z7–9

***Spiraea japonica* 'Anthony Waterer'**

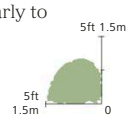
Deciduous, upright, compact shrub. Red, young foliage matures to dark green, often with creamy-white leaf margins. Heads of crimson-pink blooms are borne from mid- to late summer.



☼ 💧Z4°9

Cistus creticus (Rock rose)

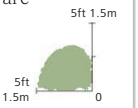
Evergreen, bushy shrub. Pink or purplish-pink flowers, each with a central, yellow blotch, are borne amid ovate, wavy-margined, deeply veined, gray-green leaves, from early to midsummer.



☼ 💧Z9–10

Kalmia angustifolia (Sheep laurel)

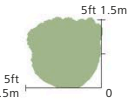
Mound-forming, evergreen shrub. Produces oblong to elliptic, dark green leaves, in opposite pairs or whorls of 3. Small, bowl- or cup-shaped, pink, occasionally white, flowers are produced in corymbs, in early summer.



☼ 💧Z4-9

Desmodium elegans

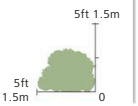
Deciduous, upright subshrub. Mid-green leaves consist of 3 large leaflets. Large racemes of pale lilac to deep pink flowers are borne from late summer to mid-fall.



☼ 💧Z8–11

Gaultheria shallon (Shallon)

Evergreen, bushy shrub. Red shoots carry broad, pointed, dark green leaves. Racemes of urn-shaped, pink flowers in late spring and early summer are followed by purple fruit.



☼ 💧 pH Z6–8 ⓘ

SALVIAS

Salvia is a vast genus of 900 species of mainly tender subshrubs or herbaceous perennials from North, Central, and South America and Africa. Most species have aromatic leaves, and the foliage of common sage, *Salvia officinalis*, has been cultivated for centuries for culinary and medicinal use. The flowers of shrubby salvias, which are primarily white, pink, or red, are hooded and borne in whorls along the stems in summer and early fall. Most species are quite tender and need winter protection in frost-prone areas, although common sage and its cultivars are fully hardy. *S. microphylla* will also withstand a few degrees of frost, but the others featured here are conservatory plants. Grow garden salvias in free-draining soil and full sun.

***S.* x *jamensis* 'Sierra San Antonio'**

***S.* x *jamensis* 'La Luna'**

***S. officinalis* 'Tricolor'**

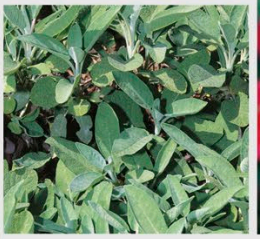
***S. microphylla* 'Newby Hall'**

***S. officinalis* 'Berggarten'**

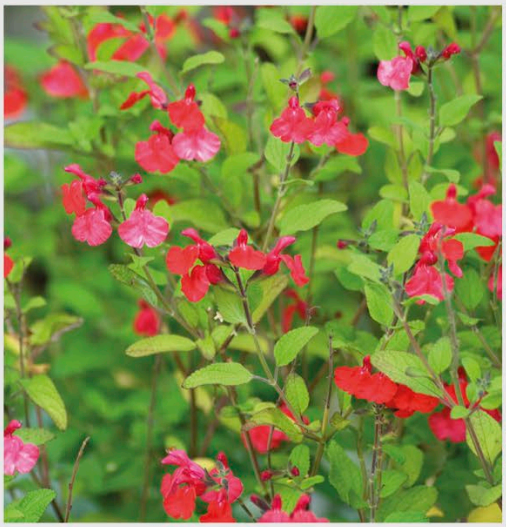
***S.* 'Hot Lips'**

***S. microphylla* 'Pink Blush'**

***S. greggii* 'Icing Sugar'**



S. officinalis



***S. microphylla* 'Kew Red'**

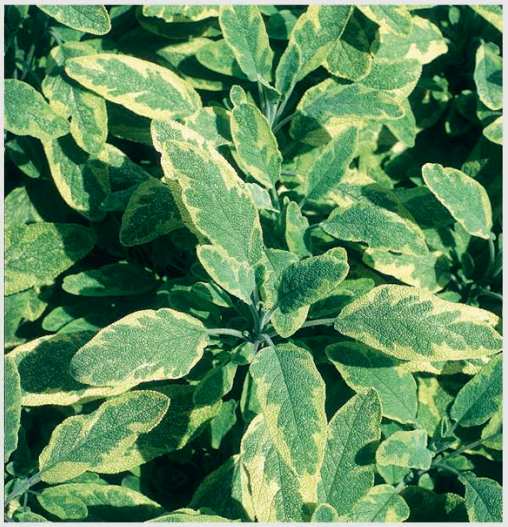
***S. microphylla* 'La Foux'**

***S. officinalis* 'Purpurascens'**

***S.* x *jamensis* 'Maraschino'**

***S.* x *jamensis* 'Red Velvet'**

***S. microphylla* 'Cerro Potosi'**



***S. officinalis* 'Icterina'**

Kalmia angustifolia* f. *rubra
Evergreen, bushy, mound-forming shrub with ovate, dark green leaves and clusters of small, deep red flowers in early summer.

☼ ◑ pH Z7–11 ⓘ

***Escallonia rubra* 'Woodside'**
Evergreen, bushy, dense shrub. Has small, glossy, dark green leaves and short racemes of small, tubular, crimson flowers from summer to fall.

☼ ◑ Z8–9

***Potentilla fruticosa* 'Red Ace'**
Deciduous, spreading, bushy, dense shrub. Bright vermilion flowers, pale yellow on the backs of petals, are produced among mid-green leaves from late spring to mid-fall, but fade quickly in full sun.

☼ ◑ Z3–7

***Spiraea japonica* 'Goldflame'**
Deciduous, upright, slightly arching shrub with orange-red, young leaves turning to bright yellow and finally pale green. Bears heads of deep rose-pink flowers from mid- to late summer.

☼ ◑ Z4–9

Salvia fulgens
Evergreen, upright subshrub. Ovate leaves are white and woolly beneath, hairy above. Racemes of tubular, 2-lipped, scarlet flowers are produced in late summer.

☼ ◑ Z11–15

Phygelius aequalis
Evergreen or semievergreen, upright suckering shrub. Clusters of tubular, pale red flowers with yellow throats are borne from midsummer to early fall. Leaves are ovate and dark green.

☼ ◑ Z7–9

Salvia microphylla* var. *microphylla
Evergreen, well-branched, upright shrub with pale to mid-green leaves. Produces tubular, bright red flowers from purple-tinted, green calyces in late summer and fall.

☼ ◑ Z12–15

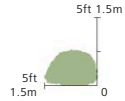
***Acer palmatum* 'Dissectum Atropurpureum'**
Deciduous shrub that forms a mound of deeply divided, bronze-red or purple foliage, which turns brilliant red, orange, or yellow in fall. Has small, reddish-purple flowers in mid-spring.

☼ ◑ Z6–8

SHRUBS

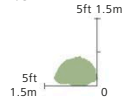
PURPLE

***Hebe* 'E.A. Bowles'**
Evergreen, rounded, bushy shrub with narrow, glossy, pale green leaves and slender spikes of lilac flowers produced from midsummer to late fall.



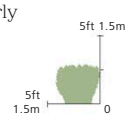
☼ 💧Z10–11

***Hebe* 'Autumn Glory'**
Evergreen shrub that forms a mound of purplish-red shoots and rounded, deep green leaves, over which dense racemes of deep purple-blue flowers are borne from midsummer to early winter.



☼ 💧Z9–10

***Hebe* 'Purple Queen'**
Evergreen, compact shrub with glossy, deep green leaves that are purple-tinged when young. Dense racemes of deep purple flowers are borne from early summer to mid-fall.

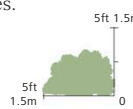


☼ 💧Z9–11

***Lavandula* x *chaytoriae* 'Sawyers'**
Evergreen, bushy, compact shrub with linear, aromatic, silvery-gray leaves. In mid- to late summer, light purple flowers are borne in dense spikes, to 3–4in (8–10cm) long, on unbranched stems.

☼ 💧Z6–9

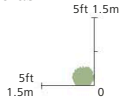
***Hebe* 'Bowles's Hybrid'**
Evergreen, rounded shrub with ovate-oblong, slightly glossy, mid-green leaves. In summer, bears mauve-blue flowers in compact, tapered, terminal racemes.



☼ 💧Z10–11

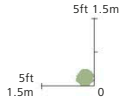
BLUE

***Hyssopus officinalis* (Hyssop)**
Semievergreen or deciduous, bushy shrub with aromatic, narrowly ovate, deep green leaves. Small, blue flowers are borne from midsummer to early fall. Sometimes used as a culinary herb.



☼ 💧Z6–9

***Felicia amelloides* 'Santa Anita'**
Evergreen, bushy, spreading shrub. Blue flower heads, with bright yellow centers, are borne on long stalks from late spring to fall among round to ovate, bright green leaves.

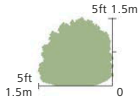


☼ 💧Z10–11

***Rosmarinus officinalis* (Rosemary)**
Evergreen, bushy, dense shrub with aromatic, narrow leaves. Small, purplish-blue to blue flowers are borne from mid-spring to early summer and sometimes in fall. Used as a culinary herb.

☼ 💧Z8–11

***Ceanothus delileanus* 'Gloire de Versailles'**
Vigorous, deciduous shrub. Has broad, ovate, mid-green leaves and bears long racemes of pale blue flowers from midsummer to early fall.

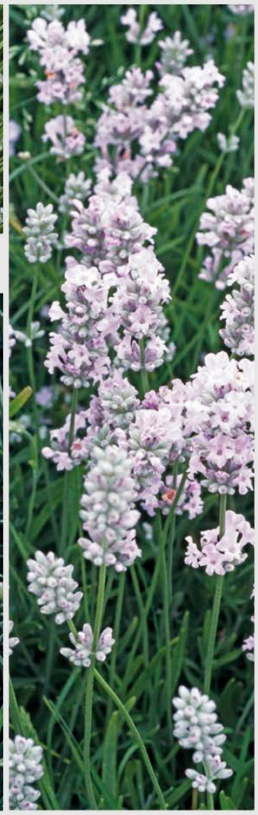


☼ 💧Z7–11

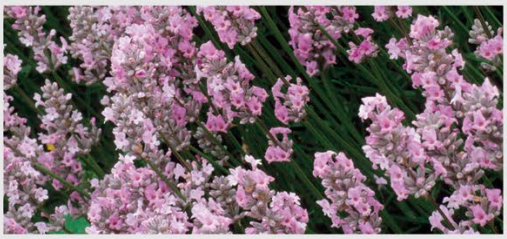
LAVENDERS

Lavandula is a popular genus of about 25 species of aromatic shrubs and herbs that originate from the Mediterranean region and northeast Africa to southwest Asia and India, and which thrive in hot, dry, sunny sites. Most have linear, silver-gray foliage and produce erect spikes of fragrant flowers in shades of white, pink, blue, or purple. They are versatile plants and can be used to edge borders, paths, and hard landscaping, used against a backdrop of stonework, as a dwarf hedge or informal divide, or in association with roses for a typical "English style" effect. They are also excellent plants for coastal areas, coping well with salt-laden maritime breezes. They thrive in well-drained soil and will suffer if planted in shade or in wet soils.

***L.* x *intermedia* 'Alba'**



***L. stoechas* subsp. *stoechas* f. *leucantha* 'Snowman'**



***L. angustifolia* 'Miss Katherine'**

***L.* 'Willow Vale'**

***L. angustifolia* LITTLE LOTTIE ('Clarmo')**

***L. pedunculata* subsp. *pedunculata* 'James Compton'**

***L.* 'Fathead'**

***L.* 'Regal Splendour'**

***L. stoechas* subsp. *stoechas* f. *rosea* 'Kew Red'**

***L.* 'Helmsdale'**

***L. angustifolia* 'Loddon Blue'**

***L. angustifolia* 'Imperial Gem'**

L. stoechas

L. lanata

***L. angustifolia* 'Hidcote'**

BLUE

Ceanothus thyrsiflorus* var. *repens
(Creeping blue blossom)
Evergreen, shrub that forms a mound of broad, glossy, dark green leaves. Racemes of blue flowers are produced from late spring to early summer.

☼ 💧 Z7–11

***Perovskia* 'Blue Spire'**
Deciduous, upright subshrub with gray-white stems. Profuse spikes of violet-blue flowers are produced from late summer to mid-fall above aromatic, deeply cut, gray-green leaves.

☼ 💧 Z6–8

Ceratostigma willmottianum
Deciduous, open shrub. Has leaves that turn red in late fall and produces bright, rich blue flowers from late summer until well into fall.

☼ 💧 Z6–9

YELLOW

***Physocarpus opulifolius* 'Dart's Gold'**
Deciduous, compact shrub with peeling bark and ovate, lobed, golden-yellow leaves. Produces clusters of shallowly cup-shaped, white or pale pink flowers in late spring.

☼ 💧 pH Z3–7

***Ruta graveolens* 'Jackman's Blue'**
(Common rue)
Evergreen, bushy, compact subshrub. Has aromatic, finely divided, blue-green foliage and produces clusters of small, mustard-yellow flowers in summer.

☼ 💧 Z5–9 ⓘ

Weigela middendorffiana
Deciduous, bushy, arching shrub. From mid-spring to early summer funnel-shaped, sulphur-yellow flowers, spotted with orange inside, are borne amid bright green foliage.

☼ 💧 Z5–7

***Potentilla fruticosa* 'Vilmoriniana'**
Deciduous, upright shrub that bears pale yellow or creamy-white flowers from late spring to mid-fall. Leaves are silver-gray and divided into leaflets.

☼ 💧 Z3–7

***Santolina pinnata* subsp. *neapolitana* 'Sulphurea'**
Evergreen, rounded, bushy shrub with aromatic, deeply cut, feathery, gray-green foliage. Produces heads of pale primrose-yellow flowers in midsummer.

☼ 💧 Z9–11

Lupinus arboreus (Tree lupin)
Fast-growing, semievergreen, sprawling shrub that in early summer usually bears short spikes of fragrant, yellow flowers above hairy, pale green leaves composed of 6–9 leaflets.

☼ 💧 Z9–10 ⓘ

***Symphoricarpos orbiculatus* 'Foliis Variegatis'**
Deciduous, bushy, dense shrub with bright green leaves edged with yellow. Occasionally bears white or pink flowers in summer–fall.

☼ ◊ Z2–7 ⓘ

***Phygelius aequalis* 'Yellow Trumpet'**
Evergreen or semievergreen, upright subshrub. Bears clusters of pendent, tubular, pale creamy-yellow flowers from midsummer to early fall.

☼ ◊ Z7–9

***Potentilla fruticosa* (Sulphurascens Group) 'Elizabeth'**
Deciduous, bushy, dense shrub with small, deeply divided leaves and large, bright yellow flowers that appear from late spring to midfall.

☼ ◊ Z3–7

***Potentilla fruticosa* 'Friedrichsenii'**
Vigorous, deciduous, upright shrub. From late spring to midfall, pale yellow flowers are produced amid gray-green leaves.

☼ ◊ Z3–7

***Hypericum* x *hidcoteense* 'Hidcote'**
Evergreen or semievergreen, bushy, dense shrub. Bears an abundance of large, golden-yellow flowers from midsummer to early fall amid narrowly ovate, dark green leaves.

☼ ◊ Z6–9

***Halimium* 'Susan'**
Evergreen, spreading shrub with narrow, ovate, gray-green leaves. Numerous single or semidouble, bright yellow flowers with central, deep purple-red markings are borne in small clusters along branches in summer.

☼ ◊ Z9–11

***Phlomis fruticosa* (Jerusalem sage)**
Evergreen, spreading shrub with upright shoots. Whorls of deep golden-yellow flowers are produced amid sagelike, gray-green foliage from early to mid-summer.

☼ ◊ Z8–9

***Berberis thunbergii* 'Aurea'**
Deciduous, bushy, spiny shrub with small, golden-yellow leaves. Racemes of small, red-tinged, pale yellow flowers in midspring are followed by red berries in fall.

☼ ◊ Z5–8 ⓘ

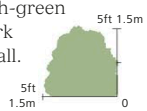
Cytisus nigricans
Deciduous, upright shrub with dark green leaves composed of 3 leaflets. Has a long-lasting display of tall, slender spires of yellow flowers during summer.

☼ ◊ Z6–8 ⓘ

***Genista hispanica* (Spanish gorse)**
Deciduous, bushy, very spiny shrub with few leaves. Blooms profusely in late spring and early summer, bearing dense clusters of golden-yellow flowers.

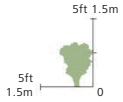
☼ ◊ Z7–9

***Hypericum pseudohenryi* (Irish tutsan)**
Evergreen or semievergreen, upright shrub. Produces loose, terminal clusters of large, cup-shaped, golden-yellow flowers from midsummer to fall, followed by small, reddish-green fruits. Aromatic, ovate dark green leaves turn red in fall.



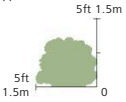
☼ 💧 Z7–9

Grindelia chiloensis
Mainly evergreen, bushy shrub with sticky stems. Sticky, lance-shaped, serrated leaves are up to 5in (12cm) long. Has large, daisylike, yellow flower heads in summer.



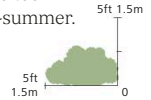
☼ 💧 Z11

Brachyglottis monroi
Evergreen, bushy, dense shrub that makes an excellent windbreak in mild coastal areas. Has small, wavy-edged, dark green leaves with white undersides. Bears heads of bright yellow flowers in midsummer.



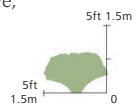
☼ 💧 Z9–10

***Brachyglottis* Dunedin Group 'Sunshine'**
Evergreen, bushy shrub that forms a mound of silvery-gray, young leaves, later turning dark green. Bears bright yellow flower heads on felted shoots from early to mid-summer.



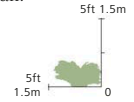
☼ 💧 Z9–10

Hypericum kouytchense
Deciduous or semievergreen, arching shrub. Golden-yellow flowers with conspicuous stamens are borne among foliage from midsummer to early fall and followed by decorative, bronze-red fruit capsules.



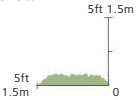
☼ 💧 Z6–9

Coriaria terminalis* var. *xanthocarpa
Deciduous, arching subshrub. Leaves have ovate leaflets and turn red in fall. Greenish flowers in late spring are followed by decorative, succulent, yellow fruits in late summer and fall.



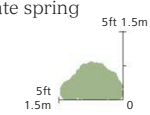
☼ 💧 Z9–11 ⓘ

Hypericum calycinum
(Aaron's beard)
Evergreen or semievergreen dwarf shrub that makes good groundcover. Has large, bright yellow flowers from midsummer to midfall and dark green leaves.



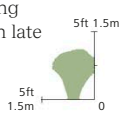
☼ 💧 Z5–9

Halimium lasianthum* subsp. *formosum
Evergreen, spreading, bushy shrub. Has gray-green foliage and golden-yellow flowers, with central, deep red blotches, borne in late spring and early summer.



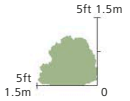
☼ 💧 Z9–11

Cytisus scoparius* f. *andreanus (Scotch broom)
Deciduous, arching shrub with narrow, dark green leaves that are divided into 3 leaflets. Bears a profusion of bright yellow-and-red flowers along elegant, green branchlets in late spring and early summer.



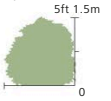
☼ ◊ Z6–8 ⓘ

***Potentilla fruticosa* 'Daydawn'**
Deciduous, bushy, rather arching shrub. Creamy-yellow flowers, flushed with orange-pink, appear among divided, mid-green leaves from early summer to midfall.



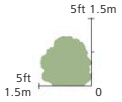
☼ ◊ Z3–7

***Berberis* 'Rubrostilla'**
Deciduous, arching shrub. Globose to cup-shaped, pale yellow flowers, appearing in early summer, are followed by a profusion of large, coral-red fruits. Gray-green leaves turn brilliant red in late fall.



☼ ◊ Z7–9 ⓘ

***Potentilla fruticosa* 'Sunset'**
Deciduous shrub, bushy at first, later arching. Deep orange flowers, fading in hot sun, appear from early summer to midfall. Mid-green leaves are divided into narrowly ovate leaflets.

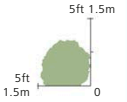


◑ ◊ Z3–7

Cuphea cyanea
Evergreen, rounded subshrub with narrowly ovate, sticky-haired leaves. Tubular flowers, orange-red, yellow and violet-blue, are carried in summer.

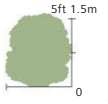
☼ ◊ Z9–11

Diplacus aurantiacus
Evergreen, domed to rounded shrub with sticky, lance-shaped, glossy, rich green leaves. Has tubular, orange, yellow or red-purple flowers from late spring to fall.



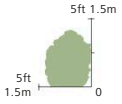
☼ ◊ Z7–11

***Viburnum opulus* 'Compactum'**
Deciduous, dense shrub. Has deep green leaves, red in fall, and profuse white flowers in spring and early summer, followed by bunches of bright red berries.



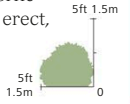
☼ ◊ Z3–8 ⓘ

***Abutilon* 'Kentish Belle'**
Semievergreen, arching shrub with purple shoots and deeply lobed, purple-veined, dark green leaves. Bears large, pendent, bell-shaped, orange-yellow and red flowers in summer–fall.



☼ ◊ Z11

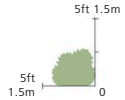
Myrica gale (Bog myrtle)
Deciduous, suckering shrub of dense habit. Produces narrowly oblong to rounded, highly aromatic, dark green leaves, with crinkled margins. Both male and female flowers, borne in mid- and late spring, are erect, golden brown catkins.



☼ ● pH Z1–6

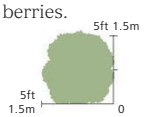
WHITE

Vaccinium angustifolium* var. *laevifolium (Lowbush blueberry)
Deciduous, bushy shrub with bright green leaves that redden in fall. Edible, blue fruits follow white, sometimes pinkish, spring flowers.



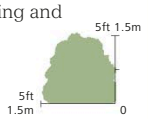
☼ ◑ pH Z2–8

***Vaccinium corymbosum* 'Pioneer'**
Deciduous, upright, slightly arching shrub. Dark green leaves turn bright red in fall. Small, white or pinkish flowers in late spring are followed by sweet, edible, blue-black berries.



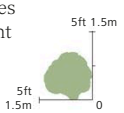
☼ ◑ pH Z3–7

Vaccinium parvifolium
Deciduous, upright shrub. Has small, dark green leaves that become bright red in fall. Edible, bright red fruits are produced after small, pinkish-white flowers borne in late spring and early summer.



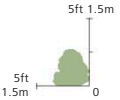
☼ ◑ pH Z5–8

Fothergilla gardenii
Deciduous, bushy, dense shrub. Produces dense clusters of tiny, fragrant, white flowers from mid- to late spring, usually before broadly ovate, dark blue-green leaves emerge. Leaves turn brilliant red in fall.



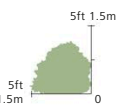
☼ ◑ pH Z4–8

***Skimmia japonica* 'Fructo Albo'**
Evergreen, bushy, dense, dwarf shrub. Has aromatic, dark green leaves and dense clusters of small, white flowers from mid- to late spring, succeeded by white berries.

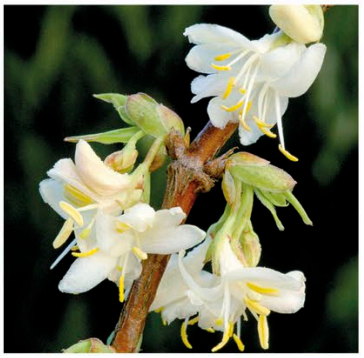


☼ ◑ Z7–9 !

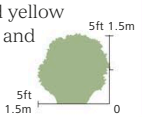
***Gaultheria mucronata* 'Wintertime'**
Evergreen, bushy, dense shrub. Has prickly, glossy, dark green leaves and white flowers in late spring and early summer, followed by large, long-lasting, white berries.



☼ ◑ pH Z8–9 !



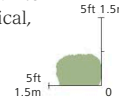
***Lonicera* x *purpusii* 'Winter Beauty'**
Semievergreen, bushy, dense shrub with red-purple shoots and ovate, dark green leaves. Small clusters of fragrant, short-tubed, white flowers, with spreading petal lobes and yellow anthers, appear in winter and early spring.



☼ ◑ Z7–9 !

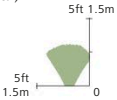
WHITE

Sarcococca hookeriana* var. *humilis
(Christmas box)
Evergreen, low, clump-forming shrub. Tiny, fragrant, white flowers with pink anthers are borne amid glossy, dark green foliage in late winter and are followed by spherical, black fruits.

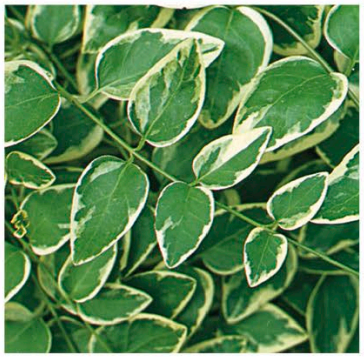


☀ ◐ Z6–9

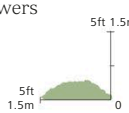
Sarcococca hookeriana* var. *digyna
Evergreen, clump-forming, suckering, dense shrub with narrow, bright green leaves. Tiny, fragrant, white flowers, with pink anthers, open in winter and are followed by spherical, black fruits.



☀ ◐ Z6–9



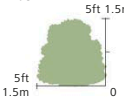
***Vinca major* 'Variegata'**
(Greater periwinkle)
Evergreen, prostrate, arching, spreading subshrub. Has bright green leaves broadly edged with creamy white and large, bright blue flowers borne from late spring to early fall.



☀ ◐ Z7–9 !

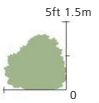
PINK

***Daphne odora* 'Aureomarginata'**
Evergreen, bushy shrub with glossy, dark green leaves narrowly edged with yellow. Clusters of very fragrant, deep purplish-pink and white flowers are produced from mid-winter to early spring.



☀ ◐ Z7–9 !

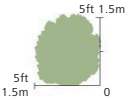
***Gaultheria mucronata* 'Mulberry Wine'**
Evergreen, bushy, dense shrub with large, globose, magenta berries that mature to deep purple. These follow white flowers borne in spring–summer. Leaves are glossy, dark green.



☀ ◐ pH Z8–9 !

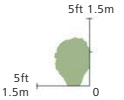
RED

***Skimmia japonica* 'Rubella'**
Evergreen, upright, dense shrub with aromatic, red-rimmed, bright green foliage. Deep red flower buds in fall and winter open to dense clusters of small, white flowers in spring.



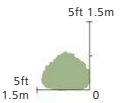
☀ ◐ Z7–9 !

Correa pulchella
Evergreen, fairly bushy, slender-stemmed shrub with ovate leaves. Small, pendent, tubular, rose-red flowers are produced from summer to winter, and sometimes at other seasons.



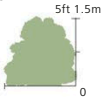
☀ ◐ pH Z11

***Skimmia japonica* subsp. *reevesiana* 'Robert Fortune'**
Evergreen, bushy, rather weak-growing shrub with aromatic leaves. Small, white flowers in spring are followed by crimson berries.



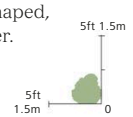
☀ ◐ Z7–9 !

Skimmia japonica
Evergreen, bushy, dense shrub. Has aromatic, mid- to dark green leaves and dense clusters of small, white flowers from mid- to late spring, followed on female plants by bright red fruits if plants of both sexes are grown.



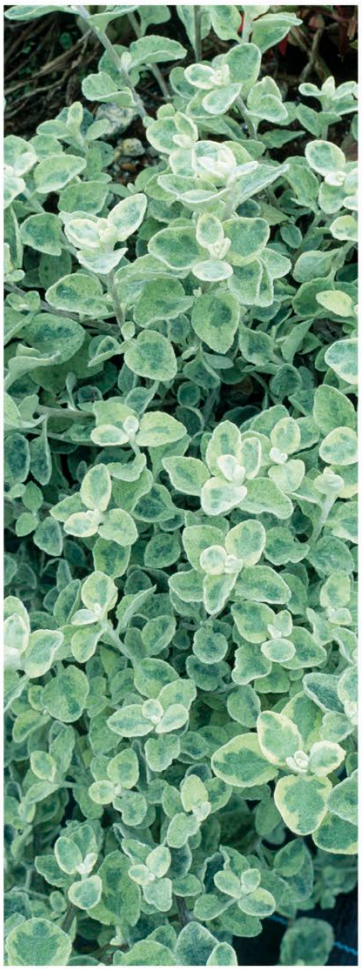
☀ ◐ Z7–9 !

***Pittosporum tenuifolium* 'Tom Thumb'**
Evergreen, rounded, dense shrub with pale green, young leaves that contrast with deep reddish-brown, older foliage. Bears cup-shaped, purplish flowers in summer.



☀ ◐ Z9–11

GRAY



***Helichrysum petiolare* 'Variegatum'**
Evergreen shrub forming mounds of silver-green shoots and gray-felted leaves, variegated cream. Has creamy-yellow flower heads in summer. Often grown as an annual for groundcover and edging.

☼ 💧 Z10–11

Artemisia arborescens (Wormwood)
Evergreen, upright shrub, grown for its finely cut, silvery-white foliage. Heads of small, bright yellow flowers are borne in summer and early fall.

☼ 💧 Z5–9

GREEN

Ribes laurifolium
Evergreen, spreading shrub. Has leathery, deep green leaves and pendent racemes of greenish-yellow flowers in late winter and early spring. Produces edible, black berries on female plants if plants of both sexes are grown.

☼ 💧 Z7–9

Viburnum davidii
Evergreen shrub that forms a dome of dark green foliage, over which heads of small, white flowers are borne in late spring. If plants of both sexes are grown, female plants bear decorative, metallic-blue fruits.

☼ 💧 Z7–9 ⓘ

Ballota acetabulosa
Evergreen subshrub that forms a mound of rounded, gray-green leaves, felted beneath. Whorls of small, pink flowers open from mid- to late summer.

☼ 💧 Z8–9

Vaccinium glaucoalbum
Evergreen shrub with deep green leaves that, when young, are pale green above, bluish-white beneath. Pink-tinged, white flowers in late spring and early summer are followed by white-bloomed, blue-black fruits.

☼ 💧 pH Z9–11

Chamaerops humilis
(Dwarf fan palm, European fan palm)
Slow-growing, evergreen palm, suckering with age. Fan-shaped leaves, 2–3ft (60–90cm) across, have green to gray-green lobes. Bears tiny, yellow flowers in summer.

☼ 💧 Z9–11

Hebe cupressoides
Evergreen, upright, dense shrub with cypresslike, gray-green foliage. On mature plants, tiny, pale lilac flowers are borne from early to midsummer.

☼ 💧 Z8–9

Vinca minor (Lesser periwinkle)
Evergreen, prostrate, spreading subshrub that forms extensive mats of small, glossy, dark green leaves. Bears small, purple, blue, or white flowers, mainly from mid-spring to early summer.

☼ 💧 Z4–9 ⓘ

Artemisia abrotanum
(Lad's love, Old man, Southernwood)
Deciduous or semievergreen, moderately bushy shrub. Aromatic, gray-green leaves have many very slender lobes. Bears clusters of small, yellowish flower heads in late summer.

☼ 💧 Z5–8

HEATHERS

As a group, heathers (or heaths) are remarkable in that species and cultivars are available to provide interest at all times of the year. Several are grown for their golden foliage, which often turns a deep burnt orange in winter, while others flower for a long period during summer, fall, or winter. Flowers are in a variety of hues, and are occasionally bicolored. In habit, heathers vary from tree-heaths of up to 20ft (6m) to dwarf, prostrate forms, many of which are excellent for providing groundcover. There are three genera: *Calluna*, *Daboecia*, and *Erica*. All *Calluna* and *Daboecia* cultivars and most *Erica* species must be grown in acidic soil, but otherwise heathers require little attention. Main seasons of interest are given for each plant.

***E. ciliaris* 'David McClintock'** [sum]

***E. arborea* 'Alpina'** [win–spr]

***E.* x *darleyensis* 'White Perfection'** [win–spr]

***E. carnea* 'Springwood White'** [win–spr]

***E. erigena* 'Brian Proudley'** [win–spr]

***E. vagans* 'Birch Glow'** [sum]

***E. carnea* 'Challenger'** [win–spr]

***E.* x *darleyensis* 'Furzey'** [win–spr]

***D. cantabrica* 'Bicolor'** [spr–fall]

***E.* x *darleyensis* 'Arthur Johnson'** [win–spr]

***E. cinerea* 'C.D. Eason'** [sum]

***E. vagans* 'St. Keverne'** [sum]

***E. vagans* 'Mrs. D.F. Maxwell'** [sum]

***E. carnea* 'Golden Starlet'** [all year]

***E. carnea* 'Ann Sparkes'** [win–spr]

***C. vulgaris* 'Wickwar Flame'** [sum–fall]

***E. lusitanica* 'Sheffield Park'** [fall–spr]

***E. cinerea* 'Eden Valley'** [sum]

***C. vulgaris* 'Beoley Gold'** [sum–fall]

***C. vulgaris* 'Annemarie'** [sum–fall]

***C. vulgaris* 'Dark Star'** [sum–fall]

***E. ciliaris* 'Corfe Castle'** [sum]

***C. vulgaris* 'Peter Sparkes'** [sum-fall]

***C. vulgaris* 'Tib'** [sum]

GREEN

***Buxus microphylla* 'Green Pillow'**
Evergreen, compact, dwarf shrub, forming a dense, rounded mass of small, ovate, dark green leaves. Bears insignificant flowers in late spring or early summer.

☼ 💧 Z6–9 ⓘ

***Buxus sempervirens* 'Suffruticosa'**
Evergreen, dwarf shrub that forms a tight, dense mass of ovate, bright green leaves. Bears insignificant flowers in late spring or early summer. Trimmed to about 6in (15cm) it is ideal for edging.

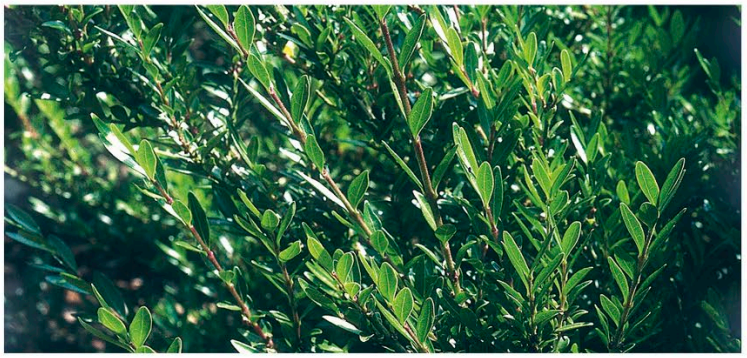
☼ 💧 Z6–8 ⓘ

Ruscus hypoglossum
Evergreen, clump-forming shrub with arching shoots. Pointed, glossy, bright green "leaves" are actually flattened shoots that bear tiny, yellow flowers in spring, followed by large, bright red berries.

☼ 💧 Z7–9

Ruscus aculeatus (Butcher's broom)
Evergreen, erect, thicket-forming shrub with spine-tipped, glossy, dark green "leaves." Tiny, star-shaped, green flowers in spring are followed by large, spherical, bright red fruits.

◐ 💧 Z7–9



Lonicera ligustrina* var. *pileata
Evergreen, low, spreading, dense shrub with narrow, dark green leaves and tiny, short-tubed, creamy-white flowers in late spring, followed by violet-purple berries. Makes good groundcover.

◐ 💧 Z5–9 ⓘ

YELLOW

***Leucothöe fontanesiana* 'Rainbow'**
Evergreen, arching shrub with sharply toothed, leathery, dark green leaves that age from pink- to cream-variegated. Racemes of white flowers open below shoots in spring.

◐ 💧 pH Z5–8 ⓘ

***Lonicera ligustrina* var. *yunnanensis* 'Baggesen's Gold'**
Evergreen, bushy shrub with long, arching shoots covered with tiny, bright yellow leaves. Insignificant, yellowish-green flowers in mid-spring are occasionally followed by mauve fruits.

☼ 💧 Z6–9 ⓘ

***Euonymus fortunei* 'Emerald 'n' Gold'**
Evergreen, bushy shrub with bright green leaves, margined with bright yellow and tinged with pink in winter.

☼ 💧 Z5–9 ⓘ

ROSES

These most romantic of flowers are unsurpassed in beauty and fragrance, and many people consider them indispensable features of the garden. With some 150 species and thousands of cultivars, both ancient and modern, there is a rose to suit almost any situation. They come from a wide range of habitats throughout the northern hemisphere and, with a few exceptions, most roses in cultivation are very hardy. They are also extremely versatile, and can be grown among bulbs, perennials, and other shrubs in a mixed border or in a more traditional formal rose garden. Climbing and rambling roses can be trained over arches, arbors and pergolas, creating a blanket of scented blooms and beautiful foliage; or, if you have a small garden, you can plant a patio rose or two in a container.

ROSES

Prized for their beauty and fragrance, roses are considered the most romantic of flowers. They are indispensable in informal mixed planting schemes, and add an elegant note to formal parterres. With thousands of colors and forms to choose from, there is a rose for every garden.

Growing roses

With some 150 species and thousands of cultivars, both ancient and modern, there are members of the genus *Rosa* to suit an enormous number of garden situations. They come from a wide range of habitats throughout the northern hemisphere and, with few exceptions, most roses are very hardy. Many modern roses combine the best qualities of old roses, such as flower shape and scent, with disease resistance and extended flowering seasons.

When grown in a suitable site and soil, they will repay you with a profusion of blooms. All roses prefer an open, sunny site in fertile, humus-rich, moist but well-drained soil. However, avoid planting them in an area where roses have been grown before because the soil may be affected by "rose sickness," caused by a buildup of harmful soil organisms, and plants may fail to thrive. Roses also require a good supply of nutrients to perform well, and benefit from an annual application of all-purpose granular fertilizer in the spring.

Year-round interest

Although some roses, notably the ramblers and species, bloom for a relatively short period, many hybrids are repeat-flowering, providing a colorful display throughout the summer. 'Frühlingsmorgen' offers the first flush of flowers in early summer, followed by the main flourish from mid-summer to the first frost. To help maintain this display, deadhead your roses regularly, as this redirects the plant's energy from seed formation to flower production. However, if you want attractive fruits (hips) in the fall, leave the blooms to fade. The best roses for hips include the Rugosa's tomato-like fruit, the flask-shaped, vibrant scarlet fruits of *R. moyesii*, and the rounded, black hips of *R. pimpinellifolia*.

Ornamental features

Roses embrace almost every color of the spectrum, apart from true blue, and some have a strong fragrance, such as the heady, sweet scent of the Damasks or musk and spicy fragrances of many modern roses. A few also have ornamental thorns, notably *R. sericea* subsp. *omeiensis* f. *pteracantha*, with its large, triangular thorns that glow blood-red when they are backlit.

Foliage can also provide interest. The soft gray-purple leaves of *R. glauca* and blue-green of the Alba roses provide attractive foils for crimson and purple flowers, while foliage textures, ranging from glossy to matte, and delicate fernlike to robustly wrinkled, as in *R. rugosa*, create beautiful contrasts.

Designing with roses

Roses have a diversity of habits, each of which can be used to create exciting designs. These include mound-forming groundcover roses, densely thorny Gallicas, and the arching Chinas and Damasks. A traditional rose garden laid out in a formal style with geometrically ordered beds is particularly suited to the upright growth of many bush roses.

ABOVE Container roses
Some roses have been bred specifically for containers, such as the patio rose REGENSBURG. Partner them with trailing annuals, such as *Chaenostoma cordatum*.

LEFT Formal dressing
Here, a sturdy arch clothed with clematis and a vigorous, free-flowering rambler lends height to the scheme and forms a perfect frame to draw the eye to the sculpture used as a focal point.

RIGHT Summer bedfellows
Alliums, bearded irises, campanulas, and verbascums provide perfect companions to a profusion of scented roses in a pink-and-blue-themed summer border. Regular deadheading will prolong the show.

In contemporary schemes, shrub roses are often grown among bulbs, perennials, and other shrubs in a mixed border, but when designing these displays, make sure that neighboring plants do not compete directly for moisture and nutrients. Choose companions that are shallow-rooted, such as the many herbaceous geraniums and pinks (*Dianthus* cultivars), or space plants at a sufficient distance to allow for mulching and feeding around the rose's root zone.

Climbing and rambling roses can be trained on a wall as a colorful backdrop, or on a trellis to form a screen. In addition, they provide a cloak of flowers and foliage when grown on arches and over pergolas, and make focal points on free-standing features such as tripods and pyramids. Large rampant ramblers, such as *R.* 'Bobbie James' and *R.* 'Seagull', which both can achieve 30ft (10m) or more, will quickly scramble through a tree, offering a profusion of blooms just after most tree blossoms have faded.

Many climbing roses are available as weeping standards too. Tall cultivars of dense, thorny shrub roses, such as the Rugosa roses, also make decorative structural features. Use them to create large, impenetrable boundary hedges that give privacy and security, or to divide a garden into compartments. Vigorous groundcover roses are ideal for clothing sunny and inaccessible banks, since most require little regular pruning.

Not all roses will thrive in containers, but smaller patio roses such as *R.* KENT and *R.* MAINAUFEUER are a good choice, while dwarf trailing or spreading cultivars are suitable for hanging baskets.

PRUNING BUSH AND SHRUB ROSES

Modern hybrid tea and floribunda roses, which are commonly grown in gardens, need a hard prune in late winter or early spring to encourage the production of new flowering shoots. Shrub roses require a more gentle pruning regime. Roses also benefit from a light prune in fall to prevent long stems from blowing in the wind and rocking the plant, which may result in root damage. Pruning in a methodical way has other horticultural advantages, helping to control attacks from fungal diseases such as blackspot, to which roses are particularly susceptible, by removing infected wood. Before pruning, use a household disinfectant to clean your shears, and apply it again before tackling each new plant to prevent the spread of disease. Also make sure your shears are sharp, as clean cuts heal more quickly.

Pruning floribunda roses

Also known as cluster-flowered roses, floribundas produce flushes of blooms through summer and early fall. In early spring, remove dead, diseased, and crossing stems. Prune the other stems to outward-facing buds 8–12in (20–30cm) from the ground using sloping cuts. Aim to leave a framework of 8 to 10 strong, healthy stems.

Pruning hybrid tea roses

These are large-flowered roses, and include some varieties that repeat bloom, although they produce just one flower per stem. In late winter or early spring, cut the oldest stems to the ground, and shorten the remainder to 6in (15cm) from the base. Leave three to five strong young stems after pruning and angle cuts to allow water to drain off the buds.

Pruning shrub and species roses

These usually flower once on wood made in previous years, so prune lightly in early spring. Remove dead, damaged, or diseased wood, and thin out congested growth to improve air flow. Also cut some of the oldest stems to the ground. Cut main stems back by a quarter and slightly reduce side shoots by an inch or two.

ROSE CATEGORIES

Grown for the extraordinary beauty of their flowers, roses have been in cultivation for hundreds of years. They have been widely hybridized, producing a vast number of shrubs suitable for growing as specimen plants, in the border, as hedges and as climbers for training on walls, pergolas and pillars. Many are remontant (with flowers in successive flushes), some flower continually. Roses are classified into three main groups:

SPECIES

Species, or wild, roses and **species hybrids**, which share most of the characteristics of the parent species, bear flowers generally in one flush in summer and hips in fall.

OLD GARDEN ROSES

Roses in this category flower mostly in summer (in warm climates even in spring), some continuing to flower into winter. Almost all have fragrant flowers.
Alba—large, freely branching roses with clusters of flowers and abundant, grayish-green foliage.
Bourbon—open, remontant shrub roses that may be trained to climb. Flowers are often three to a cluster.
China—remontant shrubs with flowers borne singly or in clusters, sometimes throughout winter.
Damask—open shrubs bearing loose clusters of usually very fragrant flowers mainly in summer.
Gallica—fairly dense shrubs producing richly colored flowers, often three to a cluster.
Hybrid Perpetual—vigorous, remontant shrubs with flowers borne singly or in threes.
Moss—often lax shrubs with a furry, mosslike growth on stems and calyx. Some are remontant.
Noisette—remontant climbing roses that bear large clusters of flowers, with a slight spicy fragrance. Provide shelter; some flower during winter.
Portland—upright, rather dense, remontant shrubs bearing loose clusters of flowers.
Provence (Centifolia)—lax, thorny shrubs bearing scented flowers.
Sempervirens—semievergreen climbing roses that bear numerous, fragrant flowers in late summer.
Tea—remontant shrubs and climbers with elegant, pointed buds that open to loose flowers with a spicy fragrance. Provide shelter; some flower during winter.

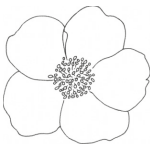
MODERN GARDEN ROSES

Shrub—a diverse group, many with similar characteristics to Old Garden roses. Most are remontant and larger than bush roses, with flowers borne singly or in sprays in summer and/or fall.
Hybrid Tea—remontant shrubs with large flowers borne in summer–fall.
Floribunda—remontant shrubs with usually large sprays of flowers in summer–fall.
Dwarf clustered-flowered bush (Patio)—neat, remontant shrubs with sprays of flowers in summer–fall.
Miniature bush—very small, remontant shrubs with sprays of tiny flowers in summer–fall.
Polyantha—tough, compact, remontant shrubs with many small flowers in summer–fall.
Groundcover—trailing and spreading roses, some flowering in summer only, others remontant, flowering in summer–fall.
Climbing—vigorous climbing roses, diverse in growth and flower, some flowering in summer only, others remontant, flowering in summer–fall.
Rambler—vigorous climbing roses with flexible stems that bear clusters of flowers mostly in summer.

FLOWER SHAPES

With the mass hybridization that has occurred in recent years, roses have been developed to produce plants with a wide variety of characteristics, in particular different forms of flowers, often with a strong fragrance. These flower types, illustrated below, give a general indication of the shape of the flower at its perfect state (which in some cases may be before it has opened fully). Growing conditions may affect the form of the flower. Flowers may be single (4–7 petals), semi- double (8–14 petals), double (15–30 petals) or fully double (more than 30 petals).

Flat—open, usually single or semidouble flowers have petals that are almost flat.



Cupped—open, single to fully double flowers have petals curving outward gently from the center.

Pointed—elegant, 'Hybrid Tea' shape; semidouble to fully double flowers have high, tight centers.

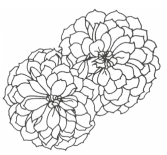
Urn-shaped—classic, curved, flat-topped, semidouble to fully double flowers are of 'Hybrid Tea' type.

Rounded—usually double or fully double flowers have even-sized, overlapping petals that form a bowl-shaped or rounded outline.

Rosette—usually double or fully double flowers are rather flat with many muddled, slightly overlapping petals of uneven size.

Quartered-rosette—rather flat, usually double or fully double flowers have muddled petals of uneven size arranged in a quartered pattern.

Pompon—small, rounded, double or fully double flowers, usually borne in clusters, have masses of small petals.



WHITE

***R.* 'Penelope'**
Dense, Hybrid Musk rose with plentiful, dark green foliage. Bears clusters of many scented, cupped to flat, semidouble, pink-cream flowers, 3in (8cm) across, in summer–fall. **H** and **S** 3ft (1m), more if lightly pruned.

☼ 💧Z6–9

***R.* 'Madame Hardy'**
Vigorous, upright Damask rose with plentiful, leathery, matte leaves. Richly fragrant, quartered-rosette, fully double flowers, 3in (7cm) across, white with green eyes, are borne in a single flush in summer. **H** 5ft (1.5m), **S** 4ft (1.2m).

☼ 💧Z4–9

***R.* JACQUELINE DU PRE ('Harwanna')**
Vigorous Shrub rose with glossy, dark green leaves. In summer–fall, bears cupped, semidouble, red-stamened, ivory flowers, 4in (10cm) across, with palest pink petal-backs and a strong musk perfume. Repeat flowering. **H** 4ft (1.2m), **S** 3ft (1m).

☼ 💧Z5–9

***R.* TRANQUILITY ('Ausnoble')**
"English" rose with long, arching stems and only a few thorns. Double flowers, 3½in (9cm) across, white at first, with a hint of yellow at the center, are borne singly or in clusters in summer–fall, and have a fresh but fruity fragrance. **H** 4ft (1.2m), **S** 3ft (90cm).

☼ 💧Z5–9

***R.* 'Nevada'**
Dense, arching Shrub rose producing abundant, light green leaves. Numerous scented, flat, semidouble, creamy-white flowers, 4in (10cm) across, are borne in a single flush in summer; a few later in the season. **H** and **S** 7ft (2.2m).

☼ 💧Z4–9

***R.* 'Sally Holmes'**
Upright, narrow Shrub rose with abundant, glossy, deep green leaves. Substantial clusters of slightly scented, single, white flowers, 6in (15cm) across, with pink-peach buds, are borne in summer and again in fall. **H** 6ft (2m), **S** 3ft (1m).

☼ 💧Z5–9

***R.* 'Fantin-Latour'**
Vigorous Shrub rose with broad, dark green leaves. Flowers, borne in a single flush in summer, are fragrant, cupped, quartered rosettes, fully double, light pink, with neat, green button eyes, and 4in (10cm) across. **H** 5ft (1.5m), **S** 4ft (1.2m).

☼ 💧Z5–9

***R.* 'Maiden's Blush'**
Vigorous, arching Alba rose with bluish-green foliage. Produces very fragrant, rosette, fully double, pinkish-white flowers, 3in (8cm) across, in a single flush in summer. **H** 6ft (2m), **S** 4½ft (1.3m).

☼ 💧Z3–9

***R.* 'Felicia'**
Vigorous Hybrid Musk rose producing abundant, grayish-green foliage. Cupped, double flowers, 3in (8cm) across, are salmon-pink, musk-scented, and borne from summer–fall. **H** 5ft (1.5m), **S** 7ft (2.2m).

☼ 💧Z6–9

***R.* 'Céleste'**
Vigorous, spreading, bushy Alba rose with gray-green leaves. Fragrant, slightly cupped, double, light pink flowers, 3in (8cm) across, are borne in a single flush in midsummer. **H** 5ft (1.5m), **S** 4ft (1.2m).

☼ 💧Z3–9

***R.* 'Marguerite Hilling'**
A sport of *Rosa* 'Nevada', this dense, arching Shrub rose has abundant, light green leaves. Many scented, flat, semidouble, rose-pink flowers, 4in (10cm) across, are borne in a single flush in summer; a few later in the season. **H** and **S** 7ft (2.2m).

☼ 💧Z4–9

***R.* 'Reine Victoria'**
Upright Bourbon rose with slender stems and light green leaves. Sweetly scented, markedly cupped, double flowers, 3in (8cm) across, in shades of pink, are borne in a single flush in summer. Grows well on a pillar. **H** 6ft (2m), **S** 4ft (1.2m).

☼ 💧Z6–9

PINK

***R.* OLIVIA ROSE AUSTIN ('Ausmixture')**
"English" rose of strong, upright growth. The flowers, produced in flushes almost continuously, are light pink with a strong, fruity scent, cupped, rosette-shaped, 3½in (9cm) across, borne singly or in clusters on crimson flower stalks. Has mid-green leaves. **H** 3ft (1m), **S** 2½ft (80cm).

☼ 💧Z5–9

***R.* 'Mutabilis'**
Open China rose with coppery young foliage. Shallowly cup-shaped, single, buff-yellow flowers, 2½in (6cm) across, aging to coppery-pink or -crimson, are borne in summer–fall, often into winter. **H** and **S** 3ft (1m), to 6ft (2m) against a wall.

☼ 💧Z7–9

***R.* 'Mrs John Laing'**
Bushy Hybrid Perpetual rose with plentiful, light green foliage. Produces many richly fragrant, rounded, fully double, mid-pink flowers, fading to lilac-pink, 5in (12cm) across, in summer, repeating in fall. **H** 3ft (1m), **S** 30in (75cm).

☼ 💧Z5–9

***R.* x *odorata* 'Pallida'**
Bushy China rose with glossy, mid-green leaves. Freely bears tea-scented, cupped, double pink flowers, 2½in (6cm) across, from spring–fall, continuously in hot climates. **H** 1m (3ft), sometimes to 10ft (3m) in hot climates, **S** 2½ft (80cm).

☼ 💧Z6–11

***R.* 'Complicata'**
Vigorous Gallica rose with thorny, arching growth, and bright green leaves. Useful as a hedge. In summer bears a single flush of slightly fragrant, cupped to flat, single flowers, 4½in (11cm) across, pink with white centers, followed by attractive hips. **H** 7ft (2.2m), **S** 8ft (2.5m).

☼ 💧Z4–8

***R.* CONSTANCE SPRY ('Austance')**
Shrub rose of arching habit; will climb with support. Rounded, fully double, myrrh-scented flowers, 5in (12cm) across, clear pink with darker centers, are borne in a single flush in summer. Leaves are large and plentiful. **H** 6ft (2m), **S** 10ft (3m).

☼ 💧Z5–9

***R.* STRAWBERRY HILL ('Ausrimini')**
Bushy Shrub rose with plentiful, glossy, mid-green leaves. Rosette, fully double, rich-pink flowers, 3in (7cm) across, with a strong myrrh scent, are borne in summer and fall. The flowers fade with age. **H** 5ft (1.5m), **S** 4ft (1.2m).

☼ 💧Z5–9

***R. gallica* var. *officinalis* 'Versicolor'**
(Rosa mundi)
Neat, bushy Gallica rose. In summer produces a single flush of striking, sweet-scented, cupped to flat, semi-double flowers, 3in (8cm) across, with dark pink and white stripes. **H** 2½ft (75cm), **S** 3ft (1m).

☼ 💧Z4–9

***R.* 'Madame Isaac Pereire'**
Vigorous, arching, repeat-flowering Bourbon rose. Fragrant, cupped to quartered-rosette, fully double flowers, 6in (15cm) across, are deep purple-pink and are produced in summer. **H** 7ft (2.2m), **S** 6ft (2m).

☼ 💧Z6–9

***R.* GERTRUDE JEKYLL ('Ausbord')**
Upright, "English" rose with broad, matte, mid-green, well-spaced leaves. Cupped, sometimes quartered, myrrh-scented, double, deep pink flowers, 4in (10cm) across, are borne from early summer. **H** 5ft (1.5m), **S** 3ft (1m).

☼ Z4–11

***R.* 'Roseraie de l'Haÿ'**
Vigorous, dense Rugosa rose with thorny stems and abundant, wrinkled, light green leaves. Produces many strongly scented, cupped to flat, double, purple-pink flowers, 3½in (9cm) across, almost continuously. **H** 7ft (2.2m), **S** 6ft (2m).

☼ Z4–9

RED

***R.* BENJAMIN BRITTEN ('Ausencart')**
Vigorous "English" rose with an open habit and large, matte, mid-green leaves. Fully double, cupped, orange-red flowers, 5in (12cm) across, with a strong, fruity scent, open in summer and fall. **H** 5½ft (1.75m), **S** 28in (70m).

☼ Z5–9

***R.* CARDINAL HUME ('Harregale')**
Bushy, spreading Shrub rose. Bears dense clusters of lightly scented, cupped, fully double, reddish-purple flowers, 2½in (6cm) across, with paler petal backs, and occasionally white-striped petals, from summer–fall. **H** 32in (80cm), **S** 3½ft (1.1m).

☼ Z5–10

***R.* 'Henri Martin'**
Vigorous Moss rose with an arching habit. In summer, bears a single flush of rounded, double, bright crimson flowers, 3in (8cm) across, with a light scent and some light green moss on the stems and sepals, followed by hips in fall. **H** 6ft (2m), **S** 4ft (1.2m).

☼ Z4–9

PURPLE

***R.* 'Cardinal de Richelieu'**
Vigorous, compact Gallica hybrid rose with plentiful, dark green foliage. Bears fragrant, rounded, fully double, deep burgundy-purple flowers, with button eyes, 2½in (6cm) across, in small clusters in summer. **H** 3ft (1m), **S** 4ft (1.2m).

☼ Z3–9

***R.* RHAPSODY IN BLUE ('Frantasia')**
Upright Floribunda rose with large, light green leaves. Bears clusters of lightly cupped, semidouble, blue-purple flowers, 3in (8cm) across, with white eyes, yellow stamens, and a pungent, spicy perfume, from summer–fall. **H** 5½ft (1.6m), **S** 3ft (90cm).

☼ Z5–9

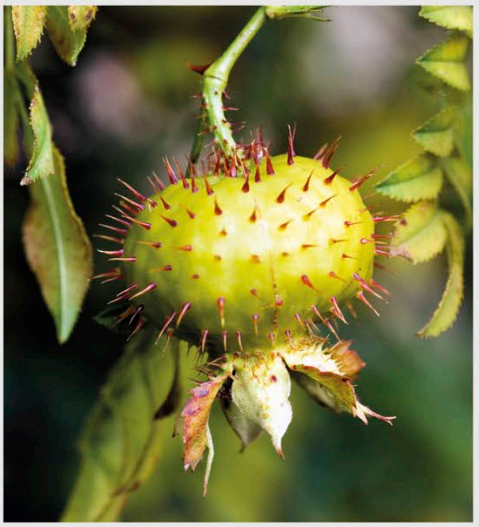
***R.* 'William Lobb'**
Moss rose with arching, thorny stems covered in bright green moss. Will climb if supported. In summer, bears a single flush of clusters of strongly sweet-scented, cupped, fully double, purplish-crimson flowers, 3in (8cm) across, which fade to lavender-gray. **H** and **S** 6ft (2m).

☼ Z4–9

HIPS AND THORNS

Roses have beautiful features that provide interest during many months of the year. Although most are grown for their spectacular flowers, many also produce decorative hips that provide glowing fall and winter color, offer birds a valuable source of food, and create a stunning picture in frost and snow. Fertilized flowers produce the hips, so avoid deadheading the blooms, as this will also remove the fruit. Thorns offer another attractive feature on some species. *Rosa sericea* subsp. *omeiensis* f. *pteracantha*, for example, has translucent thorns, while the fine thorns of moss roses look furry, adding to their attraction. Prune these roses hard to ensure a supply of young, thorny wood.

R. glauca 🏆



R. roxburghii

R. sericea* subsp. *omeiensis* f. *pteracantha

R. rubiginosa

R. rugosa

***R. moyesii* 'Geranium'**

YELLOW

***R.* THE PILGRIM ('Auswalker')**
Robust, vigorous "English" rose with glossy, bright green leaves. Bears flat rosettes of musk-scented, fully double, yellow flowers, 4in (10cm) across, fading to cream and white, in summer–fall. Repeats well. **H** 4ft (1.2m), **S** 3ft (1m).

☼ 💧Z5–11

***R.* TEASING GEORGIA ('Ausbaker')**
Upright, lax "English" rose with dark green leaves. Sweetly tea-scented, cupped but quartered, fully double, golden yellow flowers, 5in (12cm) across, with deeper centers, open in summer and fall. **H** 5ft (1.5m), **S** 3ft (1m).

☼ 💧Z5–9

***R.* GRAHAM THOMAS ('Ausmas')**
Upright "English," arching rose, with a lax habit and glossy, bright green leaves. In summer, and again in fall, bears cupped, fully double, fruit-scented, golden yellow flowers, 4½in (11cm) across. **H** 4ft (1.2m), **S** 5ft (1.5m).

☼ 💧Z5–9

ORANGE

***R.* 'Buff Beauty'**
Lax Hybrid Musk rose of open habit with glossy, mid-green leaves. Masses of fragrant, cupped, fully double, rich apricot fading to buff flowers, 3½in (9cm) across are freely borne in summer–fall. **H** and **S** 4ft (1.2m).

☼ 💧Z6–10

***R.* EVELYN ('Aussaucer')**
Slightly lax, arching "English" rose with large, mid-green leaves. Bears strongly scented, quartered-rosette, fully double, light apricot flowers, 5in (12cm) across, from summer–fall. **H** 3½ft (1.1m), **S** 36in (90cm).

☼ 💧Z5–9

***R.* SUMMER SONG ('Austango')**
Upright "English" rose with large, matte, mid-green leaves. Produces cupped, later quartered-rosette, fully double, dark orange flowers, 4in (10cm) across, strongly fruit-scented, in summer–fall. **H** 5½ft (1.7m), **S** 32in (80cm).

☼ 💧Z5–9

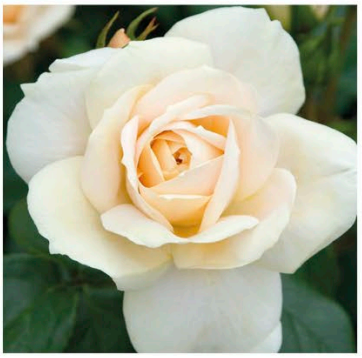
WHITE

***R.* KENT ('Poulcov')**
Groundcover rose with small, glossy, dark green leaves. Produces large clusters of cupped to flat, semidouble, pure white flowers, 1¼in (3cm) across. Repeat-flowering, summer–fall. **H** 1½ft (45cm), **S** 3ft (1m).

☼ 💧Z5–9

***R.* 'Seagull'**
Rampant Rambler of arching habit, with mid-green leaves. Large clusters of cupped to flat, single to semidouble, musk-scented white flowers, 1in (2.5cm) across, with golden stamens, cover the plant in early summer. **H** 20ft (6m), **S** 12ft (4m).

☼ 💧Z5–10



***R.* LIONS-ROSE ('Korvanaber')**
Bushy Floribunda rose with glossy, dark green leaves. Repeat-flowering summer–fall. Produces clustered slightly scented, fully double, cupped or rosette-shaped white flowers, 3in (8cm) across. **H** 3ft (1m), **S** 32in (80cm).

☼ 💧Z5–9

***R.* SCHNEEWITTCHEN ('Korbin')**
Floribunda bush rose (better known as 'Iceberg'), with abundant, light green leaves. Produces many sprays of cupped, semidouble, pure white flowers, 3in (7cm) across, during summer–fall; repeat-flowering. **H** 3ft (1m), **S** 26in (65cm).

☼ 💧Z5–9

***R.* MARGARET MERRIL ('Harkuly')**
Upright, Floribunda bush rose. Very fragrant, double, blush-white to white flowers, are well-formed, pointed, 4in (10cm) across, and are borne singly or in clusters from summer–fall. **H** 32in (80cm), **S** 2ft (60cm).

☼ 💧Z5–9

***R.* KAREN BLIXEN ('Poulari')**
Vigorous Hybrid Tea rose with semi-glossy, mid-green leaves. Urn-shaped, double, almost pure white flowers, 5in (12cm) across, are produced from summer–fall. Good in hot, dry climates. **H** 5ft (1.5m), **S** 3ft (1m).

☼ 💧Z5–9

PINK

R. **'Ballerina'**
Hybrid Musk rose with a rounded habit and small, mid-green leaves. Spectacular in flower, it bears many musk-scented, shallowly cupped, single, white-centered, light pink flowers, 1¼in (3cm) across, in large clusters, from summer–fall.
H to 5ft (1.5m), **S** 4ft (1.2m).

☼ ◊ Z5–10

R. **'The Fairy'**
Vigorous Polyantha rose with abundant, small, glossy, mid-green leaves. Rosette, double mid-pink flowers, 1in (2.5cm) across, fading to pale pink are borne freely from summer to late fall.
H and **S** 24–36in (60–90cm).

☼ ◊ Z4–9

R. **'Ferdinand Pichard'**
Upright, compact Hybrid Perpetual with light green leaves. Cupped, double, sweetly fragrant, pale pink and crimson striped flowers, 3in (8cm) across, are produced from summer–fall. **H** 5ft (1.5m), **S** 4ft (1.2m).

☼ ◊ Z4–10

R. **'The Queen Elizabeth Rose'**
Upright, Floribunda bush rose with large, leathery leaves. Bears long-stemmed, rounded fully double, scented pink flowers, 4in (10cm) across, singly or in clusters, from summer–fall. **H** to 7ft (2.2m), **S** 3ft (1m).

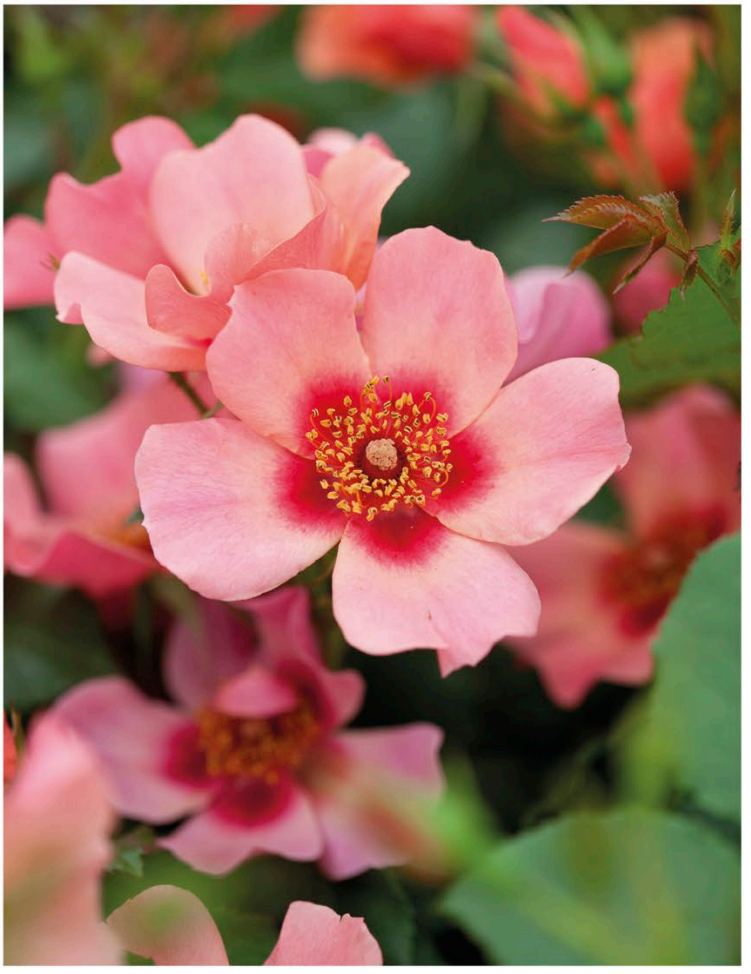
☼ ◊ Z5–9

R. **MANY HAPPY RETURNS ('Harwanted')**
Spreading Floribunda rose with semi-glossy, light green leaves. During summer and fall it bears big clusters of slightly fragrant, cupped, semidouble, pale rose-pink flowers, 4in (10cm) across.
H and **S** 30in (75cm).

☼ ◊ Z6–9

R. **'Sea Foam'**
Lax and thorny Shrub rose, sometimes used as ground cover or as a short climber, with healthy, small, dark green leaves. Clusters of cupped, fully double, white flowers, tinged pink at first, 2in (5cm) across, are borne late in the season, then constantly. **H** 3ft () 1m, **S** 5ft (1.5m).

☼ ◊ Z4–9



R. **FOR YOUR EYES ONLY ('Cheweyesup')**
Compact Shrub rose with glossy, dark green leaves. Bears small clusters of lightly scented, single flowers, 3in (7cm) across, with a crimson blotch at the base of every salmon-pink petal and a ring of golden stamens. Flowers freely and continuously from early spring. **H** 4½ft (1.4m), **S** 3ft (1m).

☼ ◊ Z5–9

R. **CHANDOS BEAUTY ('Harmisty')**
Extremely vigorous Hybrid Tea rose with tough, glossy, dark green leaves. Produces a strongly sweet, spicy scent from pointed, fully double, pearl-pink flowers, 5in (12cm) across, borne singly or in clusters. Repeats summer–fall.
H 32in (80cm), **S** 2ft (60m).

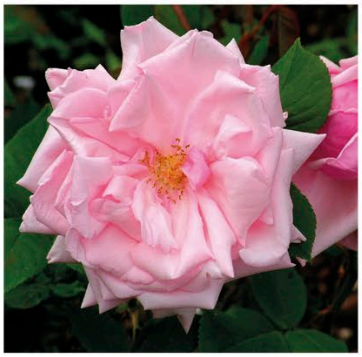
☼ ◊ Z5–9

R. **BOSCOBEL ('Auscousin')**
Upright, bushy "English" rose. Bears fully double, rich pink flowers with salmon at the center, cupped and later quartered-rosette, 4in (10cm) across, with a scent of myrrh and damask, borne in flushes almost continuously. Has mid-green leaves. **H** 3ft (1m), **S** 2½ft (80cm).

☼ ◊ Z5–9

***R.* BROTHER CADFAEL ('Ausglobe')**
Upright "English" rose with very few thorns on stems, and deeply cupped, double, fragrant, mid-pink flowers, 5in (12cm) across, produced from late spring, with some repeat flowering in fall. Dark green leaves. **H** 5ft (1.5m) **S** 36in (90cm).

☼ ◊ Z5–10



***R.* 'La France'**
Strong Hybrid Tea with mid-green leaves. Elegant, long-stemmed, conical and later cupped, double, damask-scented, silver pink flowers, 4½in (11cm) across, with darker petal-backs, are produced singly or in clusters. Repeats well. **H** 5ft (1.5m), **S** 4½ft (1.3m).

☼ ◊ Z6–11

***R.* GARDEN OF ROSES ('Korfloci')**
Compact, well-branched, bushy Floribunda rose with dark green, glossy leaves. Scented, rosette-shaped, fully double, pink to light apricot flowers, 2½in (6cm) across, are borne from summer–fall. **H** and **S** 20in (50cm).

☼ ◊ Z5–9

***R.* 'Pink Perpétué'**
Stiffly branched Climber with plentiful, leathery foliage. Bears clusters of lightly scented, rounded to cupped, double, pink flowers, 3in (8cm) across, from summer–fall. May be pruned to grow as a shrub. **H** 10ft (3m), **S** 8ft (2.5m).

☼ ◊ Z5–9

***R.* WARM WISHES ('Fryxotic')**
Bushy Hybrid Tea rose with matte, mid-green leaves. Cupped, double, fragrant flowers, 4in (10cm) across, open from long buds. Flowers are yellow, pink, or orange, depending on the weather and growing conditions, maturing to rose-pink. **H** 3½ft (1.1m), **S** 28in (70cm).

☼ ◊ Z5–9

***R.* SWEET DREAM ('Fryminicot')**
Bushy Patio rose with small, mid-green leaves. Bears clusters of very fragrant, sweetly fruit-scented, cupped, double, apricot-peach flowers, 2½in (6cm) across, almost continuously. Ideal in a pot or planter. **H** 16in (40cm), **S** 14in (35cm).

☼ ◊ Z3–9

***R.* HEIDETRAUM ('Noatraum')**
Vigorous groundcover rose forming a dense, prostrate mound of small, glossy, dark green leaves. Freely bears cupped, double, deep rose-pink flowers, 2in (5cm) across, with a small white eye, over a long season in summer–fall. **H** 30in (75cm), **S** 4ft (1.2m).

☼ ◊ Z5–9

***R.* NOSTALGIE ('Taneiglat')**
Bushy Hybrid Tea rose with large, dark green leaves. Cupped, double flowers, 4½in (11cm) across, with creamy-white inner petals and bright cherry-crimson outer petals, are borne in summer and fall. **H** 3ft (1m), **S** 32in (80cm).

☼ ◊ Z5–9

***R.* FOURTH OF JULY ('Wekroalt')**
Sturdy, branching Climber with thorny stems and dark green leaves. Cupped, single, occasionally semidouble, cream flowers, 4in (10cm) across, splashed with cherry flecks, and with a fruity perfume, are produced from summer–fall. **H** 5ft (1.5m), **S** 3½ft (1.1m).

☼ ◊ Z5–9

PINK

***R.* PRINCESS ANNE ('Auskitchen')**
Compact, healthy "English" rose with thick, shiny, mid-green leaves. Bears pompon-shaped, fully double, tea-scented, rich pink flowers, 4in (10cm) across, fading to pale pink. Repeat flowering. **H** 2½ft (80cm), **S** 2ft (60cm).

☼ 💧Z5–9

***R.* THÉRÈSE BUGNET**
Exceptionally hardy Rugosa rose with (almost) thornless red stems. Mid-green leaves turn yellow in fall. Cupped, double, sweetly scented, bright pink flowers, 3in (8cm) across, fading to pale pink, are borne singly or in clusters continuously. **H** 6ft (2m), **S** 3ft (1m).

☼ 💧Z3–8

***R.* BEVERLY ('Korpauvio')**
Vigorous, bushy Hybrid Tea rose with glossy, mid-green leaves. Bears strongly scented, rounded, double, sugar-pink flowers, 4½–5in (11–12cm) across, in summer and again in fall. **H** 4½ft (1.3m), **S** 2½ft (80cm).

☼ 💧Z5–9

RED

***R.* DOUBLE DELIGHT ('Andeli')**
Hybrid Tea bush rose of upright, bushy habit. Bears very fragrant, fully double flowers, 5in (12cm) across, in summer and again in fall. Outer petals turn crimson as the flower opens, the inner ones remaining creamy white. **H** 3ft (1m), **S** 2ft (60cm).

☼ 💧Z5–9

***R.* MARIANDEL ('Korpeahn')**
Spreading Floribunda bush rose with plentiful, purplish green foliage. Slightly scented, cupped to flat, double, dark red flowers, 3in (8cm) across, are borne in wide clusters from summer–fall. **H** 2ft (60cm), **S** 2½ft (75cm).

☼ 💧Z5–9

***R.* DUFTZAUBER '84 ('Korzaun')**
Vigorous Hybrid Tea bush rose with large, dark green leaves. Slightly scented, pointed, fully double, deep crimson flowers, 5in (12cm) across, are carried on long stems in summer and again in fall. **H** 3ft (1m), **S** 2½ft (75cm).

☼ 💧Z5–9

***R.* ALEXANDER ('Harlex')**
Vigorous, upright, thorny Hybrid Tea bush rose with abundant, dark green foliage. Slightly scented, pointed, double, bright red flowers, 5in (12cm) across, are borne on long stems from summer–fall. **H** to 6ft (2m), **S** 2½ft (80cm).

☼ 💧Z5–9

***R.* KNOCK OUT ('Radrazz')**
Thorny Shrub rose with a branching, spreading habit and healthy, dull, dark green leaves. From summer–fall, produces lightly semidouble, pale cherry-red flowers, 3in (8cm) across, singly or in clusters. **H** 3ft (1m), **S** 4½ft (1.3m).

☼ 💧Z5–9

***R.* INTRIGUE ('Jacum')**
Upright Floribunda rose with medium, dark green leaves. Clusters of double, occasionally semidouble, scented, purple flowers, fading to magenta, 3in (8cm) across, are borne on long stems during summer. Repeats well. **H** 5½ft (1.7m), **S** 4½ft (1.3m).

☼ 💧Z5-9

PURPLE

***R.* ALEC'S RED ('Cored')**
Vigorous, Hybrid Tea bush rose with dark green leaves. Bears highly fragrant, high-centered, deep cherry-red flowers that are pointed and fully double, 6in (15cm) across, from summer–fall. **H** 3ft (1m), **S** 2ft (60cm).

☼ 💧 Z5–9

***R.* LILLI MARLENE ('Korlima')**
Neat, compact, thorny Floribunda rose with leathery, dark green leaves. Produces clusters of lightly cupped, double, sweet-scented, blood-red flowers, 3in (8cm) across, almost continuously from summer–fall. **H** 28in (70cm), **S** 20in (50cm).

☼ 💧 Z5–9

***R.* BURGUND '81 ('Korgund')**
Upright Hybrid Tea rose with leathery, dark green leaves. Produces high-centered, fully double, dark red flowers, 5in (12cm) across, on long, strong stems in summer–fall. Perfume is light but sweet. **H** 5ft (1.5m), **S** 2½ft (75cm).

☼ 💧 Z5–9

***R.* BURGUNDY ICE ('Prose')**
Floribunda bush rose (a sport of *R.* SCHNEEWITTCHEN), with abundant, light green leaves. Bears many sprays of cupped, semidouble, mauve flowers, 3in (7cm) across, with near-white petal backs, in summer–fall; repeat-flowering. **H** 3ft (1m), **S** 26in (65cm).

☼ 💧 Z6–9

***R.* LAVENDER DREAM ('Interlav')**
Vigorous, billowing Shrub rose with small, dark leaves and thorns. Produces large clusters of cupped, semidouble, bright, dark pink flowers fading to pale pink-purple, 1¼in (3cm) across, with golden stamens. Repeats well. **H** and **S** 5ft (1.5m).

☼ 💧 Z4–9

YELLOW

***R.* 'Arthur Bell'**
Upright Floribunda rose with large, glossy, dark green leaves. Strongly scented, cupped, double, dark yellow flowers, 3in (7cm) across, fading to creamy-white, are produced from early summer–fall. **H** 3ft (1m), **S** 2ft (60cm).

☼ ◊ Z5–9

***R.* EASY GOING ('Harglow')**
Bushy Floribunda rose with glossy, pale green leaves. Pointed buds open into cupped, double, rich yellow flowers, 3½in (9cm) across, with a moderately fruity scent. Repeat-flowering during summer–fall. **H** 30in (75cm), **S** 2ft (60cm).

☼ ◊ Z5–9

***R.* CHARLOTTE ('Auspoly')**
Sturdy "English" rose with large, bright, pale green leaves and an upright habit. Bears cupped, fully double, tea-scented, bright yellow flowers fading to cream, 4in (10cm) across, singly or in small clusters. Repeat-flowering. **H** 4ft (1.2m), **S** 3ft (1m).

☼ ◊ Z5–9

***R.* 'Madame A. Meilland'**
Vigorous, large-flowered Hybrid Tea with abundant dark green leaves. From summer–fall freely bears clusters of scented, high-centered to rounded, fully double yellow flowers, 6in (15cm) across, with pink edges. **H** 5ft (1.5m), **S** 3ft (1m).

☼ ◊ Z5–9

***R.* JULIA CHILD ('Wekvossutono')**
Vigorous Floribunda rose with glossy, dark green leaves. Bears clusters of cupped, fully double, aniseed-scented, yellow flowers, 4in (10cm) across, fading rather quickly to cream, in summer–fall; repeat flowering. **H** 2½ft (80cm), **S** 2ft (60cm).

☼ ◊ Z5–10

***R.* CLAIRE AUSTIN ('Ausprior')**
Vigorous, open "English" rose with large, rich green leaves. Produces clusters of cupped, fully double, myrrh-scented, pale lemon flowers, fading to cream and white, 3½in (9cm) across. Repeat-flowering. **H** 4ft (1.2m), **S** 2½ft (80cm).

☼ ◊ Z5–8

***R.* GOLDEN WEDDING ('Arokris')**
Floribunda rose with glossy, dark green leaves. Cupped, double, lightly scented, deep yellow flowers, 3½in (9cm) across, are borne from summer–fall. **H** 4ft (1.2m) or more, **S** 2ft (60cm).

☼ ◊ Z5–11

***R.* MOUNTBATTEN ('Harmantelle')**
Vigorous, upright Floribunda rose with leathery, bright green leaves. Produces long-stemmed clusters of 5–11 scented, cupped, sometimes rounded, fully double, yellow flowers, 4in (10cm) across, from summer–fall. **H** 4ft (1.2m), **S** 2½ft (75cm).

☼ ◊ Z5–9

***R.* 'Rêve d'Or'**
Vigorous Noisette rose with large, dark, near-evergreen leaves. Strongly scented, fully double, buff-gold flowers with pale pink petal-backs, 3in (7cm) across, variable in shape, usually imbricated, appear singly or in clusters in early summer; repeats intermittently. **H** 12ft (4m), **S** 6½ft (2m).

☼ ◊ Z5–10

***R.* ORANGES 'N' LEMONS**
Strong-growing Floribunda rose with rounded, fully double flowers, 3in (8cm) across, with lemon-yellow petals, irregularly striped with orange, fading to pink and red, borne constantly from summer onward. **H** 5ft (1.5m), **S** 2ft (60cm).

☼ 💧Z7–10

***R.* LADY EMMA HAMILTON ('Ausbrother')**
Vigorous "English" rose with mid-green leaves and bronze new growths. Bears globular and later cupped, fully double, strongly fruit-scented, orange flowers, 3½in (9cm) across, singly or in clusters. Repeats well. **H** 4½ft (1.3m), **S** 5ft (1.5m).

☼ 💧Z5–9

***R.* WARM WELCOME ('Chewizz')**
Climbing Patio rose with neat, narrow habit and many dark green leaves. Small clusters of cupped, single or semidouble, orange-vermillion flowers, 1½in (4cm) across, with yellow centers, are borne freely and almost continuously. **H** and **S** 7ft (2.2m).

☼ 💧Z6–9

***R.* AUGUSTA LUISE ('Tangust')**
Bushy Hybrid Tea rose with large, mid-green leaves. Bears sweetly scented, rounded, fully double, orange-apricot flowers, 4in (10cm) across, with distinctly wavy petals in summer–fall, which lighten as they age. **H** 3ft (1m), **S** 2½ft (80cm).

☼ 💧Z6–10

***R.* EASY DOES IT ('Harpagent')**
Compact, bushy Floribunda rose with matte, mid-green leaves. Bears double, flat, spicy-scented flowers, 4in (10cm) across, with ruffled orange petals, fading to pink at the edges, in summer–fall; repeat-flowering. **H** 3ft (1m), **S** 2ft (60cm).

☼ 💧Z6–9

***R.* 'Just Joey'**
Branching, open, large-flowered Hybrid Tea rose with leathery, green leaves. Rounded, double, sweetly scented flowers, 5½in (14cm) across, with waved copper-pink petals, are borne repeatedly in summer–fall. **H** 3ft (1m), **S** 2ft (60cm).

☼ 💧Z7–10

***R.* ABRAHAM DARBY ('Auscot')**
Shrub rose with a strong, bushy habit and large, glossy, dark green leaves. Cupped, fully double, strongly fruit-scented, apricot-pink flowers, 4½in (11cm) across, are borne from summer–fall. **H** and **S** 5ft (1.5m).

☼ 💧Z5–11

***R.* REMEMBER ME ('Cocdestin')**
Vigorous, dense, Hybrid Tea rose with abundant glossy, dark green leaves. High-centered, fully double, pale orange flowers, 4½in (11cm) across, with darker buds and petal-backs, and a rich, fruity scent, are borne freely from summer–fall. **H** 2ft (60cm), **S** 2½ft (75cm).

☼ 💧Z7–11

***R.* FELLOWSHIP ('Harwelcome')**
Bushy Floribunda rose with large, glossy, green leaves. Fruit-scented, cupped, double flowers, 3½in (9cm) across, are orange with a yellow center, fading to salmon and cream. Repeat-flowering in summer–fall. **H** 30in (75cm), **S** 2ft (60cm).

☼ 💧Z5–9

WHITE

***R.* 'Albéric Barbier'**
Vigorous, semievergreen Rambler rose with glossy, dark green leaves. Clusters of rosette, fully double, creamy-white flowers, 3in (8cm) across, with a strong, musky scent, appear in a single flush in summer. **H** to 15ft (5m), **S** 10ft (3m).

☼ ◊ Z5–9

***R.* 'Paul's Lemon Pillar'**
Stiff, upright Climber with large, dark green leaves. Strongly sweet-scented, high-centered to rounded, fully double, white flowers, 5in (12cm) across, are borne in a single flush in summer. Prefers a sunny, sheltered wall. **H** 12ft (4m), **S** 10ft (3m).

☼ ◊ Z5–9

***R.* 'Félicité Perpétue'**
Sempervirens Rambler with long stems and dense, semievergreen, dark green leaves. Bears clusters of rosette-shaped, fully double, blush-pink fading to white flowers, 1½in (4cm) across, with a strong musky scent, in midsummer. Prune spent wood only. **H** 15ft (5m), **S** 12ft (4m).

☼ ◊ Z6–9

***R. filipes* 'Kiftsgate'**
Rampant Climber with abundant, glossy, light green leaves. In late summer, bears large clusters of cupped to flat, single, creamy-white flowers, 1in (2.5cm) across, in a single flush, followed by long-lasting, orange-red hips. Grow up a tree or in a wild garden. **H** 30ft (10m), **S** 20ft (6m).

☼ ◊ Z6–9

***R.* 'Madame Alfred Carrière'**
Noisette climbing rose with light green leaves and slender, smooth stems. Very fragrant, lightly cupped, fully double flowers, 4in (10cm) across, creamy-white, tinged pink, appear continuously from late spring to first frosts. **H** to 18ft (5.5m), **S** 10ft (3m).

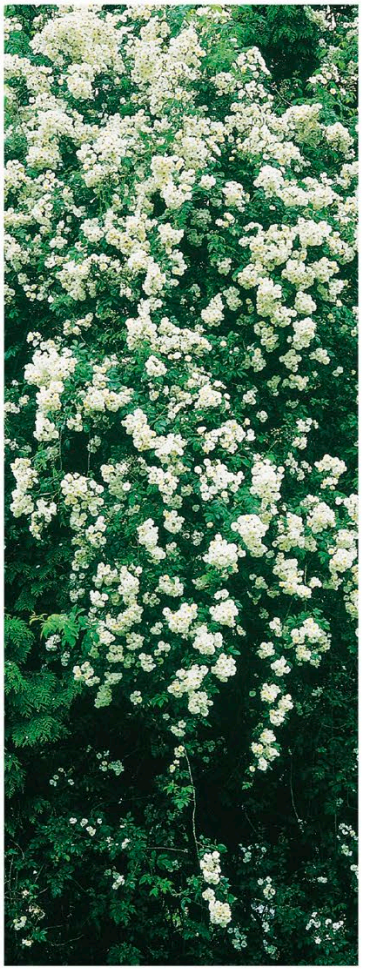
☼ ◊ Z5–9

***R.* 'Gloire de Dijon'**
Stiffly branched Noisette or climbing Tea rose. Produces a large first flush of tea-scented, quartered-rosette, fully double, creamy-buff flowers, 4in (10cm) across, in summer, followed by intermittent flowers in fall. **H** 15ft (5m), **S** 12ft (4m).

☼ ◊ Z5–9

***R.* 'Climbing Iceberg'**
Vigorous, climbing Floribunda rose with glossy, light green leaves. Bears clusters of cupped, semidouble, creamy to pure white flowers, 3in (8cm) across, in an abundant first flush in summer, followed by intermittent blooms. **H** and **S** 10ft (3m).

☼ ◊ Z5–9



***R.* 'Rambling Rector'**
Rampant Rambler with strong, arching stems and pale green foliage. Produces large, spacious clusters of musk-scented, cupped to flat, semidouble, creamy-white flowers, 1½in (4cm) across, in a single flush in summer, followed by orange-red hips. **H** and **S** 20ft (6m).

☼ ◊ Z5–9

***R.* 'New Dawn'**
Vigorous, arching Climber with glossy, mid-green leaves. Fragrant, cupped, double, pale pearl-pink flowers, 3in (8cm) across, are borne in loose clusters from summer–fall. Tolerates a north-facing wall. **H** 10ft (3m), **S** 8ft (2.5m).

☼ ◊ Z5–9

***R.* 'Zéphirine Drouhin'**
Sturdy, arching, repeat-flowering, Bourbon rose; will climb with support. Produces very sweetly scented, cupped, double, deep pink flowers, 3in (8cm) across, continuously in summer. New leaves emerge crimson. **H** to 10ft (3m), **S** to 6ft (2m).

☼ ◊ Z5–9

***R.* 'Climbing Cécile Brünner'**
Very vigorous Climber with abundant, dark green leaves. Large, airy clusters of sweetly scented, urn-shaped to rounded, double, light pink flowers, 2in (5cm) across, are borne in summer–fall. **H** and **S** 25ft (8m).

☼ ◊ Z4–11

***R.* 'Veilchenblau'**
Vigorous Rambler with almost thorn-free stems. Produces large clusters of fruit-scented, cupped, double, violet flowers, streaked white and fading to lilac, 1½in (3cm) across, in a single flush in summer, followed by attractive hips. **H** and **S** 12ft (4m).

☼ ◊ Z5–9

***R.* 'Albertine'**
Vigorous Rambler with sturdy, arching, reddish stems with large thorns. Bears abundant clusters of sweet-scented, rounded to cupped, double, light salmon-pink flowers, 3in (8cm) across, in midsummer. **H** to 15ft (5m), **S** 12ft (4m).

☼ ◊ Z5–9

***R.* 'Aloha'**
Strong-stemmed, bushy Climber with leathery, dark green leaves. Fragrant, rounded, fully double, rose- and salmon-pink flowers, 3½in (9cm) across, appear from summer–fall. May be grown as a shrub. **H** 10ft (3m), **S** 8ft (2.5m).

☼ ◊ Z5–9

***R.* 'Madame Grégoire Staechelin'**
Vigorous, arching Climber producing one flush of pendulous, sweet-scented, conical, fully double flowers, 5in (13cm) across, with ruffled, clear pink petals, shaded carmine, singly or in small clusters in summer, followed by large hips. **H** to 20ft (6m), **S** to 12ft (4m).

☼ ◊ Z6–9

***R.* 'Compassion'**
Upright, free-branching Climber with glossy, dark green leaves on reddish stems. Fragrant, rounded, double, pink-tinted, salmon-apricot flowers, to 5in (12cm) across, are borne singly or in small clusters in summer–fall. **H** 10ft (3m), **S** 8ft (2.5m).

☼ ◊ Z5–9

***R.* 'Climbing Madame Caroline Testout'**
Vigorous, Hybrid Tea Climber with matte, mid-green leaves. Pendulous, rounded, double, strongly scented, silvery pink flowers, 5½in (14cm) across, with darker petal-backs, are borne in summer–fall. Repeats well. **H** 15ft (5m), **S** 8ft (2.5m).

☼ ◊ Z5–10

PINK

***R.* PENNY LANE ('Hardwell')**
Climber with glossy, dark green leaves. Wide clusters of loose rosette, double flowers, 4in (10cm) across, in pearl pink, scented with myrrh and musk, are borne from summer–fall. **H** 10ft (3m), **S** 6ft (1.8m).

☼ 💧Z5–9

***R.* 'Raubritter'**
Climber, often grown as a lax shrub, with large clusters of rounded, semidouble, deep pink flowers, 2in (5cm) across, with silver-pink petal-backs, borne in summer **H** 3ft (1m), **S** 10ft (3m).

☼ 💧Z5–9

***R.* JASMINA ('Korcentex')**
Bushy, thorny Climber with glossy leaves. Produces clusters of well-spaced, quartered, rosette-shaped, fully double, sweet scented, rich pink flowers, 2½in (6cm) across in summer. **H** 6ft (2m), **S** 4ft (1.2m).

☼ 💧Z5–9

RED

***R.* COCKTAIL ('Meimick')**
Thorny Shrub rose with glossy, mid-green leaves and long, arching stems that can be trained to climb. Single, scented, crimson flowers, 2½in (6cm) across, with a yellow center and yellow stamens, are profusely borne in upright clusters of 10–40. Repeat-flowering. **H** 10ft (3m), **S** 6ft (2m).

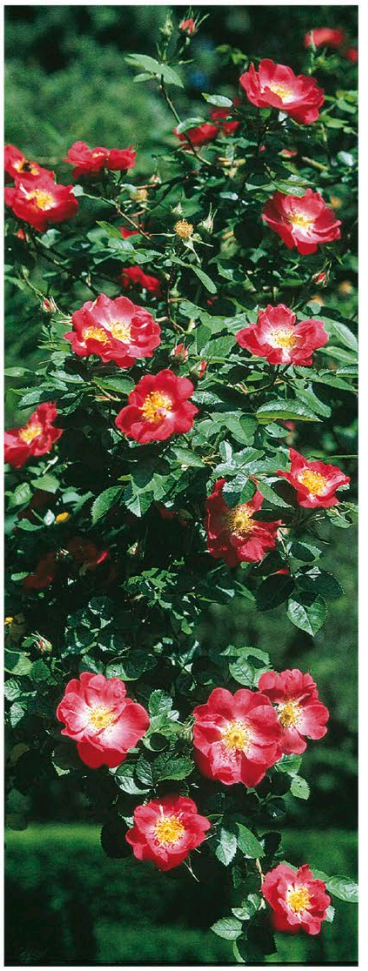
☼ 💧Z7–10

***R.* DUBLIN BAY ('Macdub')**
Free-branching Climber with plentiful, glossy, dark green foliage; may be pruned to grow as a shrub. Clusters of cupped, double, deep scarlet flowers, 4in (10cm) across, are produced from summer–fall. **H** and **S** 7ft (2.2m).

☼ 💧Z5–9

***R.* 'Sympathie'**
Vigorous, free-branching Climber with plentiful, glossy, dark green foliage. Bears slightly scented, cupped, fully double, bright deep red flowers, 4in (10cm) across, from summer–fall, usually in clusters. **H** 10ft (3m), **S** 8ft (2.5m).

☼ 💧Z5–9



***R.* 'Dortmund'**
Upright Climber with dark green foliage; may be pruned to make a shrub. Clusters of slightly scented, flat, single, deep cherry-red flowers, 4in (10cm) across, with white eyes, are borne freely in summer–fall. Produces attractive hips. **H** 10ft (3m), **S** 6ft (1.8m).

☼ 💧Z5–9

***R.* 'Guinée'**
Vigorous, stiffly branched Climber with large, leathery leaves. Fragrant, cupped, fully double, deep crimson flowers with near-black shading, 4½in (11cm) across, are borne in a single flush in summer. **H** 15ft (5m), **S** 7ft (2.2m).

☼ 💧Z5–9

YELLOW

***R.* GARDENER'S GLORY ('Chewability')**
Climber with light green leaves. Clusters of cupped, double, yellow flowers, 2in (5cm) across, fading to light yellow, are borne from summer–fall. **H** 7ft (2.2m), **S** 5ft (1.5m).

☼ 💧Z5–9

***R.* 'Emily Gray'**
Semievergreen Rambler with long, lax stems and handsome, dark green leaves. Clusters of rounded, loosely formed, double, golden-yellow flowers, 3in (7cm) across, fading to buff, with a strong tea fragrance, are borne in summer. **H** 15ft (5m), **S** 10ft (3m).

☼ 💧Z7–10

***R.* 'Mermaid'**
Slow-growing Climber with stiff, red-brown stems, large, hooked thorns, and glossy, dark green leaves. Bears cupped to flat, single, primrose-yellow flowers, 4½in (11cm) across, repeatedly in summer–fall. **H** and **S** to 20ft (6m).

☼ 💧Z5–9

***R.* LAURA FORD ('Chewarvel')**
Upright, stiffly branching Climbing Miniature rose with small, dark, glossy leaves. In summer–fall bears sprays of scented, urn-shaped to flat, semidouble yellow flowers, 1¾in (4.5cm) across. Good for pillars. **H** 7ft (2.2m), **S** 4ft (1.2m).

☼ 💧Z5–9

***R.* 'Maigold'**
Strong, stiff-growing Climber with thorny, arching stems and dark green leaves. Can be pruned as a shrub. Freely bears fragrant, cupped, semidouble, bronze-yellow flowers, 4in (10cm) across, in early summer, occasionally some later. **H** and **S** 8ft (2.5m).

☼ 💧Z5–9

ORANGE

***R.* 'Schoolgirl'**
Stiff, rather lanky, large-flowered Climber with large, deep green leaves. Scented, double, rounded, buff and pale peach flowers, 5in (12cm) across, with darker petal-backs, are produced in summer–fall. **H** 10ft (3m), **S** 8ft (2.5m).

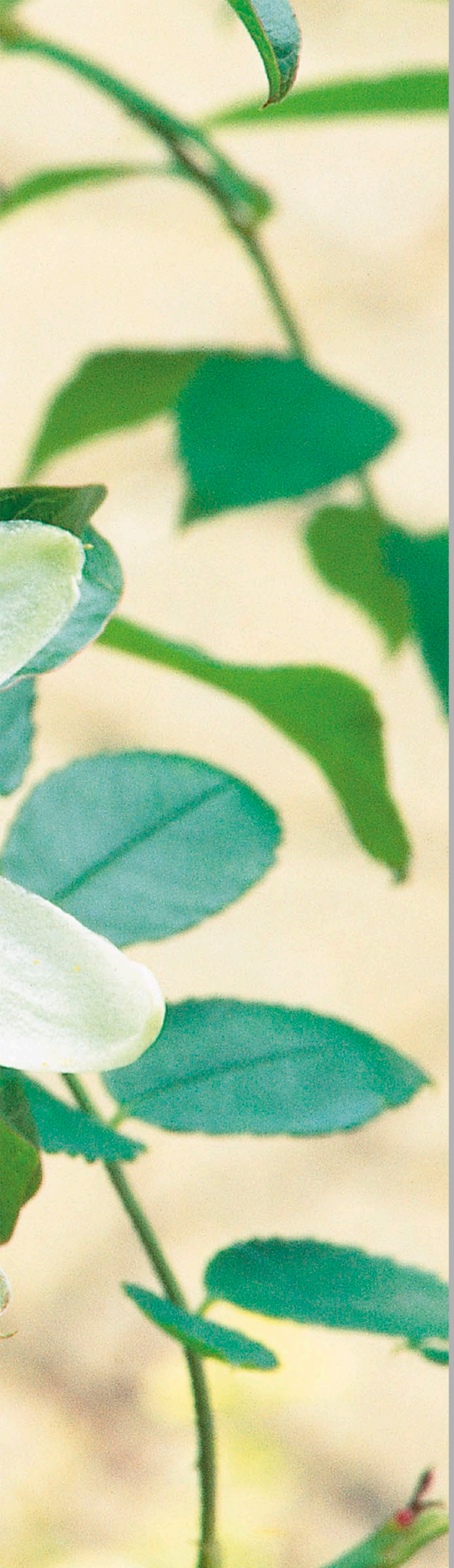
☼ 💧Z5–9

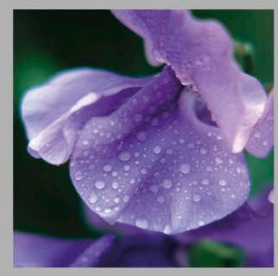
***R.* ALIBABA ('Chewalibaba')**
Repeat-flowering Climber with mid-green leaves. In summer–fall, bears sweet-scented, cupped, double flowers, 3in (8cm) across, with ruffled petal edges, in shades of peach-salmon and red. **H** 7ft (2.2m), **S** 4ft (1.2m).

☼ 💧Z5–9

***R.* SUMMER WINE ('Korizont')**
Climber with large, dark green leaves. Small clusters of scented, cupped, semidouble, coral-pink flowers, to 4in (10cm) across, fading to pink, with wavy petals, are produced from summer–fall. **H** 10ft (3m), **S** 7ft (2.2m).

☼ 💧Z5–10





CLIMBERS AND WALL SHRUBS

Versatile and decorative, climbers offer great scope for imaginative garden design, their scrambling stems veiling other plants and structures with flowers and foliage. A few, such as ivy, will also trail across the ground, helping to suppress weeds. Climbers are often used as a backdrop for other plantings, or grown over arbors and gazebos to provide shade. You can also create focal points by weaving them through trees and pyramids and up pillars, or train them over trellis to form boundary screens or dividers between different areas of the garden. The rigid stems of wall shrubs add another dimension to vertical schemes, covering walls and fences with foliage, blooms, and berries.

CLIMBERS AND WALL SHRUBS

One of the most versatile of plant groups, climbers bring height to the garden, adding interest to walls and fences, and covering structures such as arches and pergolas with flowers and foliage. A number of shrubs can also be trained against walls and fences to create textures, patterns, and backdrops to beds and borders.

What are climbers and wall shrubs?

Most climbers are woody, evergreen, or deciduous plants, while a few are herbaceous perennials, or summer-flowering annuals. Climbers can be self-clinging or twining (with or without tendrils), or scandent—scrambling species that do not cling. It is important to identify the climbing method of your plant, since this dictates the method of support it needs. Self-clingers such as Virginia creeper (*Parthenocissus quinquefolia*) climb up their supports using adhesive pads, while ivies (*Hedera*) and the Swiss cheese plant (*Monstera deliciosa*) use aerial roots to attach themselves to vertical surfaces. Self-clinging climbers may initially need to be guided to their support with canes (see box below) but will then become self-supporting. By contrast, twiners coil around the slim stems of a host plant or they will need wires, mesh, or a trellis to cling to if they are wall-trained. Clematis, passion flowers (*Passiflora*), hop (*Humulus lupulus*), sweet peas (*Lathyrus*), and morning glory (*Ipomoea*) fall into this group.

Scrambling plants like winter jasmine (*Jasminum nudiflorum*) attach themselves loosely by threading their flexible stems through host plants or over a framework of their old stems made in previous seasons. On smooth surfaces, such as walls and fences, their stems must be tied into wires or a trellis attached to the support, as they have no other means of clinging.

Wall shrubs such as chaenomeles, pyracanthas, and ceanothus are not natural climbers, but can be trained to decorate walls or fences. Some are best grown in this way, as they require the additional shelter and support a wall provides.

Ornamental features

Climbing plants have a range of attractive foliage forms, from the lobed leaves of *Tropaeolum speciosum* and palmate foliage of x *Fatshedera lizei,* to the heart-shaped leaves of *Actinidia deliciosa*. Leaf surfaces also offer textural contrasts, from the downy *Vitis vinifera* to glossy ivies (*Hedera*).

ABOVE Wisteria-clad wall
Climbers, such as *Wisteria sinensis*, need a sturdy trellis or wall for support to display their heavy flowers to perfection. When grown around a window, the subtle scent of its flowers can be appreciated indoors and out.

PLANTING A CLIMBER

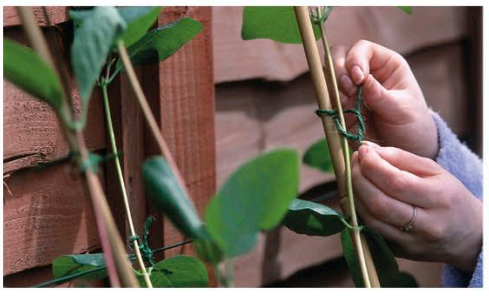
Before planting, attach eye screws and horizontal wires, or a trellis, to the wall or fence. The lowest wire should be about 20in (50cm) above soil level, and the others 12–18in (30–45cm) apart. Work plenty of organic matter into the soil.

1 Dig a planting hole

Water the climber before planting. Dig a hole twice the diameter and deeper than the root ball, 18in (45cm) from the fence. Dig a slightly deeper hole for clematis, since they need to be planted 4in (10cm) deeper than the top of their root ball.

2 Plant the climber

Arrange a fan of canes in the hole. Place the climber in the hole and slant toward the canes. Backfill with some soil enriched with rotted organic matter. Untie the stems from their original support and spread them out ready to attach to the canes.



3 Tie in the stems

Using soft garden twine, tie the stems to the canes using a figure eight. Train the lower stems on to the lower wires and any tall stems at the center of the plant to cover the high wires.

4 Firm in the soil

Firm in the climber and create a shallow saucer shape around the base of the plant so that moisture runs into the area above the roots. Water, and apply a bark mulch, keeping it clear of the plant stems.

Colors range from golden-hued *Humulus lupulus* 'Aureus' to the deep green of many jasmines, as well as the purple tints of plants such as *Vitis vinifera* 'Purpurea'. Others have bright, variegated foliage, such as *Actinidia kolomikta*, with its green leaves tipped with splashes of cream and pink. Some, most notably species of vitis and parthenocissus, produce their finest displays in fall when both fire up with burning shades of red.

Climbers such as passion flowers (*Passiflora*) and clematis bear beautiful flowers, while some, especially wisteria, honeysuckles (*Lonicera*), and jasmines, are deliciously fragrant. The flower colors span the spectrum from the creamy whites of *Schizophragma integrifolium* and *Hydrangea petiolaris* to the magentas of bougainvillea, the blues and purples of a whole range of clematis, and the chocolate-maroon of *Rhodochiton atrosanguineus*. With many climbers their season is further prolonged by silky seed heads, as in clematis or striking berries, notably the oblong, purple fruits of *Billardiera longiflora* and the orange-yellow fruits of *Celastrus orbiculatus*.

Annual climbers such as sweet peas (*Lathyrus odoratus*) climb rapidly to the top of wigwams made from garden canes, producing a succession of scented flowers from mid- to late summer that are ideal for cutting. Morning glory (*Ipomoea tricolor* 'Heavenly blue'), with its sky-blue trumpets and black-eyed Susan (*Thumbergia alata*), also offer a quick-fix solution, covering a trellis or adding height to containers on patios.

Wall shrubs are also valued for their attractive foliage and blooms. Ceanothus, for example, has both evergreen and deciduous forms, with flowers in varying shades of blue, white, and pink. The flowering quince (*Chaenomeles*) produces a profusion of cupped white, pink, orange, or scarlet-red flowers early in the year, followed by yellow fruits in the fall. Thorny pyracanthas make excellent security hedges, deterring intruders, and sport glossy evergreen foliage with an abundance of yellow, orange, or red berries in the fall.

Designing with climbers and wall shrubs

Growing climbers as a backdrop for other plants is one way of adding height to a border, but they can also be grown on freestanding supports to form screens or divisions between different parts of the garden. Grown through trees or on pillars and pyramids, they also create focal points.

Where a garden lacks shade, climbers allowed to ramble over pergolas and arbors offer a cool place to sit. You can also use climbers and wall shrubs to soften the lines of hard landscaping, while vigorous climbers will help to camouflage unsightly structures. Left unsupported, some climbers trail on the ground and, when pegged at the nodes, will root to form a carpet of ground cover. When growing climbers through other plants, make sure that you synchronize their flowering times for a dual effect, and match their pruning needs.

As well as growing shrubs such as pyracanthas and chaenomeles against walls, you can train them into fans and espaliers for a formal effect.

ABOVE *Clematis* 'Bill MacKenzie'
This small-bloomed, late-flowering Group 3 clematis provides a natural, rambling backdrop of nodding yellow flowers and fluffy seedheads.

PRUNING CLEMATIS

Some clematis flower well if pruned lightly or not at all, while others bloom more effectively when cut back hard. They are divided into three groups, each with different pruning requirements. Group 1 clematis (including *C. montana*, and *C. armandii*) are vigorous plants that flower in late spring on the previous year's growth. Group 2 clematis, such as *C.* 'Corona', and *C.* 'Henryi', flower in early summer on the previous year's growth. Group 3 clematis include small-flowered viticella and texensis types, such as *C.* 'Gravetye Beauty', and some large-flowered types including *C.* 'Perle d'Azur'. They bloom from midsummer to fall on new growth formed earlier in the year.

Pruning Group 1 clematis

Plants in this group need little or no pruning once established, except to remove dead and damaged stems, or to keep them in check. After flowering, give them a light trim if necessary. Prune the leggy new season's growth, cutting above a pair of healthy buds, but do not cut them back hard.

Pruning Group 2 clematis

Prune this group in early spring when the buds are in growth and are clearly visible. Work from the top of the clematis, pruning each stem back to the first pair of healthy buds or shoots. Remove dead, diseased, or damaged wood; it will be brown and dry. The pruned stems will produce new growth and then flowers in early summer.

Pruning Group 3 clematis

Left unpruned, these clematis form flowers at the top of the plant, leaving bare, straggly stems at the bottom. In late winter before the buds break, remove the tangle of shoots from their support and cut back all the stems hard to within 12in (30cm) of the ground. This encourages strong new shoots and flowers to form along their length.

WHITE

Decumaria sinensis
Evergreen, woody-stemmed, root climber with ovate, often toothed leaves, 1–3in (2.5–8cm) long. Conical clusters of small, honey-scented, cream flowers are produced in late spring and early summer. **H** to 6ft (2m) or more.

☼ ◊ Z7–9

***Clianthus puniceus* 'Albus'**
Evergreen or semievergreen, woody-stemmed, scrambling climber, grown for its drooping clusters of clawlike, creamy-white flowers that open in spring and early summer. Mid-green leaves consist of many small leaflets. **H** 12ft (4m).

☼ ◊ Z7–11

Holboellia latifolia [white form]
Variable, evergeen, twining climber with glossy, mid-green leaves divided into 3–9 ovate or oblong leaflets. Bears racemes of 3–7 sweetly scented, creamy-white, male flowers and greenish, female flowers in early summer, and sausage-shaped, purple fruit. **H** to 16ft (5m).

◐ ◊ Z10–11

Stauntonia hexaphylla
Evergreen, woody-stemmed, twining climber. Leaves have 3–7 ovate leaflets, 2–5in (5–13cm) long. In spring bears racemes of fragrant, cup-shaped, violet-tinged white flowers, followed by egg-shaped, edible, purple fruits, if plants of both sexes are grown. **H** to 30ft (10m).

◐ ◊ Z9–10

Acradenia frankliniae
Evergreen, upright, stiffly branched shrub with aromatic, dark green leaves divided into 3 narrowly lance-shaped leaflets. From late spring to early summer bears small clusters of star-shaped, white flowers. **H** 10ft (3m), **S** 5ft (1.5m).

☼ ◊ Z10–11

PINK

***Prostanthera rotundifolia* 'Rosea'**
Evergreen, bushy, rounded shrub with tiny, sweetly aromatic, deep green leaves and short, leafy racemes of bell-shaped, purple-anthered, pale pink flowers in late spring or summer. **H** 6–13ft (2–4m), **S** 3–10ft (1–3m).

☼ ◊ Z11

Ercilla volubilis
Evergreen, root climber with ovate to heart-shaped, mid-green leaves, 1–2in (2.5–5cm) long. Spikes of petal-less flowers, each consisting of 5 greenish or purple sepals and 6–8 white stamens, are borne in spring. **H** to 30ft (10m) or more.

◐ ◊ Z10–11

***Campsis radicans* 'Indian Summer'**
Deciduous, woody-stemmed, root climber with leaves divided into 7–11 ovate, toothed leaflets. Small clusters of trumpet-shaped, yellow-throated, orange-red flowers, 2½–3in (6–8cm) long, are produced in late summer and early fall. **H** 40ft (12m).

☼ 💧 Z5–9

Mitraria coccinea
Evergreen, woody-stemmed, scrambling climber with ovate, toothed leaves. Small, tubular, orange-red flowers are borne singly in leaf axils during late spring to summer. **H** to 6ft (2m).

◐ 💧 pH Z10–11

***Chaenomeles* x *superba* 'Crimson and Gold'** (Flowering quince)
Deciduous, dense shrub with thorns and ovate, glossy, green leaves. Bears masses of 5-petaled, deep red flowers, with conspicuous, golden-yellow anthers, in spring, followed by round, yellow fruits. **H** 3ft (1m), **S** 6ft (2m).

☼ 💧 Z5–9

Ribes speciosum
Deciduous, bushy, spiny shrub bearing slender, drooping, tubular, red flowers, with long, red stamens, in mid–late spring. Fruits are spherical and red. Has red, young shoots and ovate, 3–5-lobed, glossy, bright green leaves. **H** and **S** 6ft (2m).

☼ 💧 Z7–9

Clianthus puniceus (Parrot's bill)
Evergreen or semievergreen, woody-stemmed, scrambling climber with leaves composed of many leaflets. In spring and early summer bears drooping clusters of unusual, clawlike, brilliant red flowers. **H** 12ft (4m).

☼ 💧 Z7–11

Akebia quinata (Chocolate vine)
Woody-stemmed, twining climber, semievergreen in mild winters or warm areas, with leaves of 5 leaflets. Vanilla-scented, brownish-purple flowers appear in late spring, followed by sausage-shaped, purplish fruits. **H** 30ft (10m) or more.

☼ 💧 Z5–9

Jasminum beesianum
Evergreen, woody-stemmed, scrambling climber, deciduous in cool areas. Has lance-shaped leaves. Fragrant, tubular, usually 6-lobed, pinkish-red flowers, 1–3 together, borne in early summer, are followed by shiny, black berries. **H** to 15ft (5m).

☼ 💧 Z10-11

PURPLE

Akebia* x *pentaphylla
Mainly deciduous, woody-stemmed, twining climber. Mid-green leaves, bronze-tinted when young, have 3 or 5 ovate leaflets. Pendent racemes of small, 3-petaled, purple flowers (female at base, male at apex) are borne in spring. **H** to 30ft (10m).

☼ ◊ Z5–8

Hardenbergia comptoniana
Evergreen, woody-stemmed, twining climber with leaves of 3 or 5 lance-shaped leaflets. Has racemes of pealike, deep purple-blue flowers in spring. **H** to 8ft (2.5m).

☼ ◊ Z11

Holboellia latifolia [purple form]
Variable, evergreen, twining climber with glossy, mid-green leaves divided into 3–9 ovate leaflets. Has racemes of 3–7 sweetly scented, plum-purple, male flowers and greenish-white female flowers in early summer, followed by sausage-shaped, purple fruit. **H** to 16ft (5m) or more.

☼ ◊ Z10–11

BLUE

***Ceanothus arboreus* 'Trewithen Blue'**
Vigorous, evergreen, bushy, spreading shrub with broadly ovate to rounded, dark green leaves. In spring and early summer bears large, pyramidal clusters of rich blue flowers. **H** 20ft (6m), **S** 25ft (8m).

☼ ◊ Z9–10

Sollya heterophylla
Evergreen, woody-based, twining climber with narrowly lance-shaped to ovate leaves, ¾-2½in (2–6cm) long. Nodding clusters of 4–9 broadly bell-shaped, sky-blue flowers are carried from spring to fall. **H** to 10ft (3m).

☼ ◊ Z10–11

YELLOW

Eriobotrya japonica (Loquat)
Evergreen, bushy shrub or spreading tree with stout shoots bearing large, oblong, prominently veined, glossy, dark green leaves. Fragrant, 5-petaled, white flowers borne in clusters in early fall are followed by pear-shaped, orange-yellow fruits. **H** and **S** 25ft (8m).

☼ ◊ Z8–11

***Humulus lupulus* 'Aureus'**
Herbaceous, twining climber with rough, hairy stems and toothed, yellowish leaves divided into 3 or 5 lobes. Greenish, female flower spikes are borne in pendent clusters in fall. **H** to 20ft (6m).

☼ ◊ Z4–8

Vestia foetida
Evergreen, upright shrub with pendent, tubular, pale yellow flowers from mid-spring to mid-summer. Oblong, glossy, dark green leaves have an unpleasant scent. **H** 6ft (2m), **S** 5ft (1.5m).

☼ ◊ Z8–10

WHITE

Azara serrata
Evergreen, upright shrub with glossy, bright green foliage and rounded bunches of fragrant, yellow flowers in late spring or early summer. **H** 12ft (4m), **S** 10ft (3m).

☼ 💧Z9–10

Coronilla valentina* subsp. *glauca
Evergreen, bushy, dense shrub. Has blue-gray leaves with 5 or 7 leaflets. Fragrant, pealike, yellow flowers are borne from mid-spring to early summer. **H** 5ft (1.5m), **S** 5ft (1.5m).

☼ 💧Z8–9

Forsythia suspensa
Deciduous, arching, graceful shrub with slender shoots. Nodding, narrow, trumpet-shaped, bright yellow flowers open from early to mid-spring, before mid-green leaves appear. **H** 10ft (3m), **S** 10ft (3m).

☼ 💧Z6–8

Gelsemium sempervirens
Moderately vigorous, evergreen, twining climber with pointed, lustrous leaves. Clusters of fragrant, funnel-shaped, pale to deep yellow flowers are borne from late spring to late summer. **H** to 20ft (6m).

☼ 💧Z7–9 ⓘ

Jasminum mesnyi (Primrose jasmine)
Evergreen or semievergreen, woody-stemmed, scrambling climber. Leaves are divided into 3 leaflets; semidouble, pale yellow flowers appear in spring. **H** to 10ft (3m).

☼ 💧Z8–10

Trachelospermum jasminoides
(Confederate jasmine, Star jasmine)
Evergreen, woody-stemmed, twining climber with ovate leaves up to 6in (15cm) long. Has very fragrant, white flowers in summer, then pairs of pods, up to 6in (15cm) long. **H** to 28ft (9m).

☼ 💧Z9–10

Araujia sericifera (Cruel plant)
Evergreen, woody-stemmed, twining climber with leaves that are white-downy beneath. Has scented, white flowers, often striped pale maroon inside, from late summer to fall. **H** to 23ft (7m).

☼ 💧Z10–11

***Ampelopsis brevipedunculata* 'Elegans'**
Vigorous, deciduous, woody-stemmed, twining, tendril climber with hairy young stems. Has variable, densely white-mottled, pink-tinged leaves. Tiny flowers are produced in summer, followed by blue berries. **H** 16ft (5m).

◑ 💧Z5–8

***Solanum laxum* 'Album'** (Potato vine)
Semievergreen, woody-stemmed, scrambling climber. Ovate to lance-shaped leaves are sometimes lobed or divided into leaflets. Has star-shaped, white flowers, ¾–1in (2–2.5cm) across, in summer–fall. **H** to 20ft (6m).

☼ 💧Z10–11 ⓘ

Hydrangea anomala* subsp. *petiolaris
(Climbing hydrangea)
Deciduous, woody-stemmed, root climber. Has toothed leaves and lacy heads of small, white flowers in summer, only sparingly borne on young plants. **H** to 50ft (15m).

☼ 💧Z4–9 ⓘ

WHITE

Pileostegia viburnoides
Slow-growing, evergreen, woody-stemmed, root climber. Tiny, white or cream flowers, with many prominent stamens, are borne in heads from late summer to fall. **H** to 20ft (6m).

☼ 💧Z7–11

***Wisteria floribunda* f. *alba* 'Shiro-noda'**
Deciduous, woody-stemmed, twining climber with leaves of 11–19 ovate leaflets. Scented, pealike, white flowers are borne in pendent racemes, up to 2ft (60cm) long, in early summer. **H** to 28ft (9m).

☼ 💧Z5–9 ⓘ

Hydrangea seemannii
Evergreen, woody-stemmed climber with elliptic to lance-shaped, leathery, mid-green leaves. In summer produces domed flower heads consisting of small, clustered, greenish-white, fertile flowers surrounded by larger, white, sterile flowers. **H** 50ft (15m).

◐ 💧Z8–9

Trachelospermum asiaticum
Evergreen, woody-stemmed, twining climber with ovate, glossy, dark green leaves, 1in (2.5cm) long. Scented, tubular, cream flowers that age to yellow, are produced in summer. Pairs of long, slender pods, 5–9in (12–22cm) long, contain silky seeds. **H** to 20ft (6m).

◐ 💧Z7–11

Jasminum officinale* f. *affine
(Common jasmine)
Semievergreen or deciduous, woody-stemmed, twining climber with leaves comprising 7 or 9 leaflets. Clusters of fragrant, 4- or 5-lobed flowers, white inside and pink outside, are borne in summer–fall. **H** to 40ft (12m).

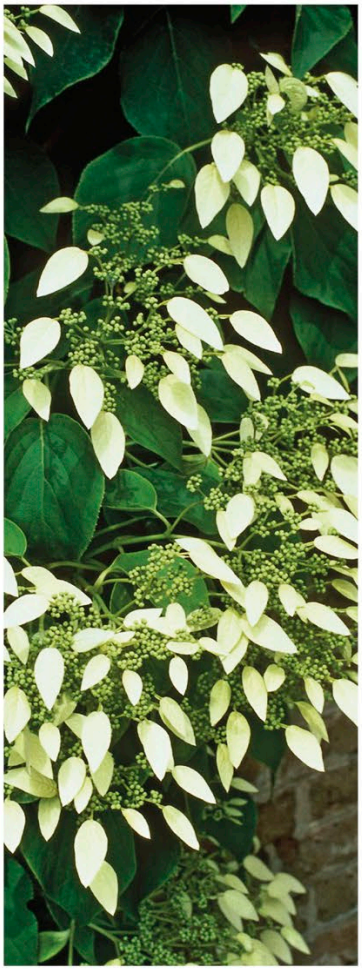
☼ 💧Z9–10

Hydrangea serratifolia
Vigorous, evergreen, woody-stemmed climber with elliptic, sharply toothed, dark green leaves. In summer produces rounded clusters of small, white, fertile flowers opening from large, rounded buds. **H** 50–70ft (15–20m).

◐ 💧Z8–10

Dregea sinensis
Evergreen, woody-stemmed, twining climber. Ovate, green leaves, 1¼–4in (3–10cm) long, are grayish beneath. In summer produces clusters of 10–25 small, fragrant, star-shaped flowers, red-marked white or cream, followed by pairs of slender seed pods. **H** to 10ft (3m).

☼ ◊ Z8–10



Schizophragma integrifolium
Deciduous, woody-stemmed, root climber with ovate or heart-shaped leaves. In summer, white flowers are borne in flat heads up to 1ft (30cm) across, marginal sterile flowers each having a large, white bract. **H** to 40ft (12m).

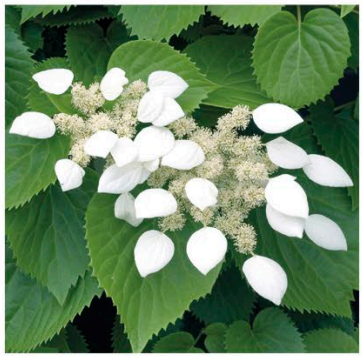
☼ ◊ Z5–9

Anredera cordifolia
Fast-growing, evergreen, tuberous, twining climber with ovate to lance-shaped, fleshy leaves. Tiny, fragrant, white flowers are borne in clusters from upper leaf axils in summer. **H** to 20ft (6m).

☼ ◊ Z10–11

Prostanthera cuneata
Evergreen, bushy, erect to spreading shrub with small, aromatic, shiny, dark green leaves. In late spring and early summer produces dense racemes of shortly tubular, 2-lipped, white flowers, with purple and yellow markings in the throat. **H** and **S** 3ft (90cm).

☼ ◊ Z9–11



Schizophragma hydrangeoides
Deciduous, woody-stemmed, climber with broadly ovate leaves. Small white flowers, in flat heads, are produced on pendent side-branches in summer; these are surrounded by marginal, sterile flowers, each with an oval, pale yellow sepal. **H** to 40ft (12m).

☼ ◊ Z6–9

Tasmannia lanceolata
(Mountain pepper)
Evergreen, upright, dense shrub or tree with deep red shoots and oblong, dark green leaves. Produces clusters of star-shaped, white flowers in spring. **H** 12ft (4m), **S** 8ft (2.5m).

☼ ◑ Z9–10

Carpenteria californica
Evergreen, bushy shrub. Glossy, dark green foliage sets off fragrant, yellow-centered, white flowers borne during summer. **H** 6ft (2m) or more, **S** 6ft (2m).

☼ ◑ Z8–9

CLEMATIS

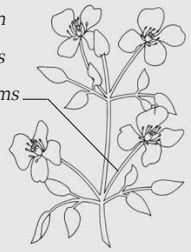
Among the climbers, clematis are unsurpassed in their long period of flowering (with species flowering in almost every month of the year), the variety of flower shapes and colors, and their tolerance of almost any aspect and climate. Some spring-flowering species and cultivars are vigorous and excellent for rapidly covering buildings, old trees, and pergolas. Other, less rampant cultivars display often large, exquisite blooms from early summer to fall in almost every color. Flower colors may vary according to your climatic conditions; in general, the warmer the climate, the darker the flowers are likely to be.

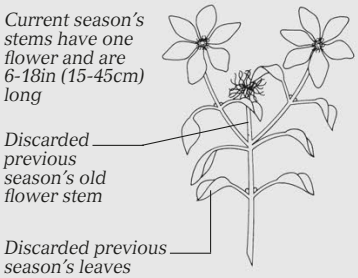
Clematis look attractive when trained on walls or trellises and when grown in association with other climbers, trees, or shrubs, treating them as hosts. Less vigorous cultivars may also be left unsupported to scramble at ground level, where their flowers will be clearly visible.

The various types of clematis (see the Plant Dictionary) may be divided into 3 groups, each of which has different pruning requirements. Incorrect pruning may result in cutting out the stems that will produce flowers in the current season, so the following guidelines should be followed closely.

Group 1
Early-flowering species, Early small-flowered cultivars, Alpina, Macropetala, and Montana types

Flower stems are produced direct from the previous season's ripened stems. Prune after flowering to allow new growth to be produced and ripened for the next season. Remove dead or damaged stems and cut back other shoots that have outgrown their allotted space.

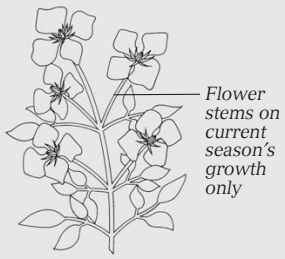


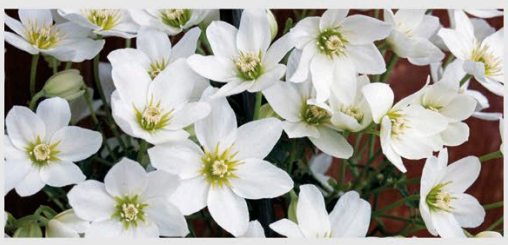

Current season's stems have one flower and are 6-18in (15-45cm) long
Discarded previous season's old flower stem
Discarded previous season's leaves

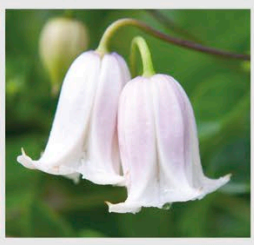
Group 2
Early large-flowered cultivars
Flowers are produced on short, current season's stems, so prune before new growth starts, in early spring. Remove dead or damaged stems and cut back all others to where strong, leaf-axil buds are visible. (These buds will produce the first crop of flowers.)

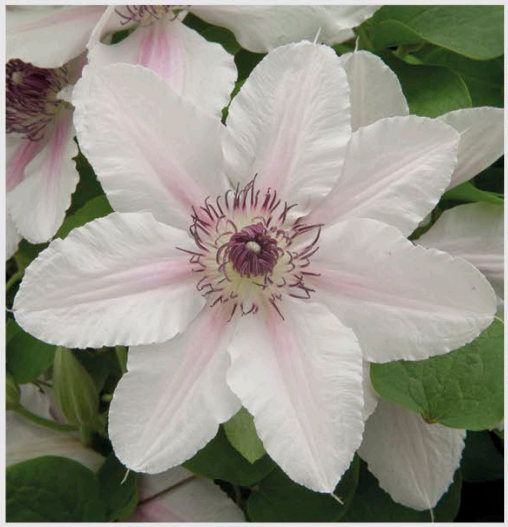
Group 3
Late large-flowered cultivars, Late small-flowered cultivars, Late-flowering species and Herbaceous types

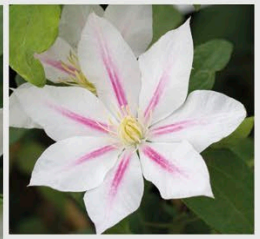
Flowers are produced on the current season's growth only, so prune before new growth commences, in early spring. Remove all of the previous season's stems down to a pair of strong, leaf-axil buds, 6-12in (15-30cm) above the soil (though Herbaceous types can be cleared to ground level).




***C.* x *cartmanii* 'Joe'** [group 1]


***C.* 'Kaiu'** [group 3]

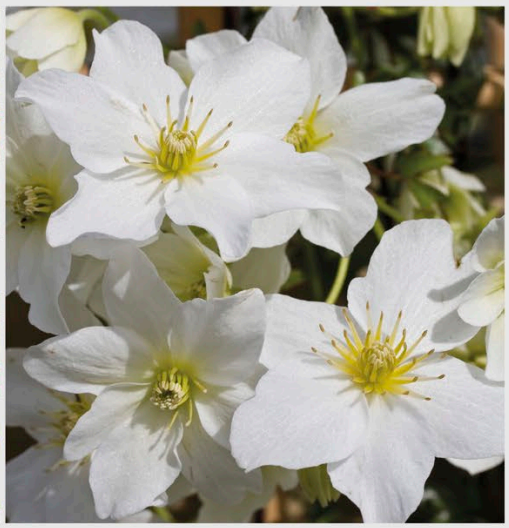

***C.* THE COUNTESS OF WESSEX ('Evipo073')** [group 2]

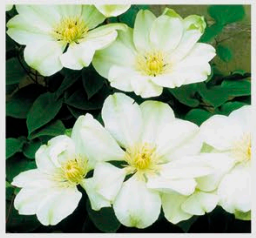

***C.* 'Andromeda'** [group 2]

***C.* ARCTIC QUEEN ('Evitwo')** [group 2]

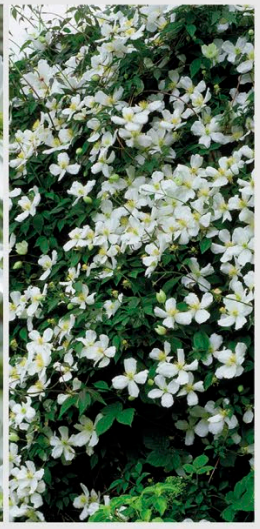
***C.* 'White Columbine'** [group 1]

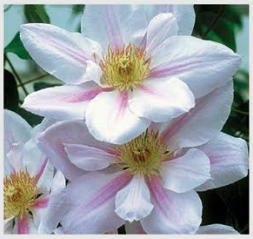
C. armandii [group 1]


***C.* x *cartmanii* 'Avalanche'** [group 1]

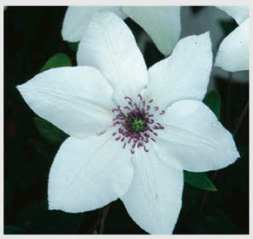

***C.* 'Guernsey Cream'** [group 2]

***C.* 'Early Sensation'** [group 1]


C. montana [group 1]

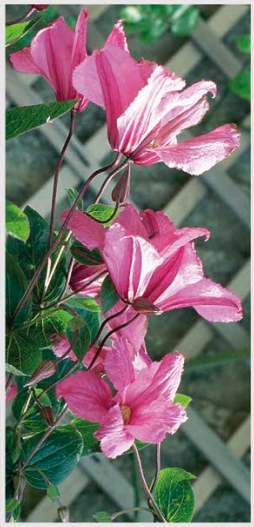


C. CHANTILLY **('Evipo021')**
[group 2]



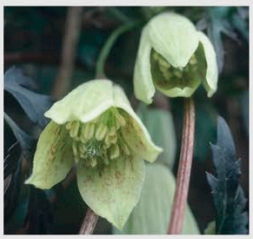
C. florida PISTACHIO **('Evirida')**
[group 3]

C. montana **var.** *rubens* [group 1]

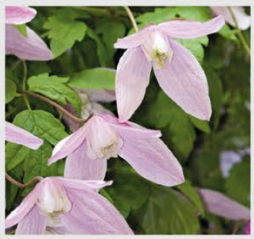


C. **'Alionushka'**
[group 3]

C. **'Fireworks'** [group 2]



C. cirrhosa [group 1]

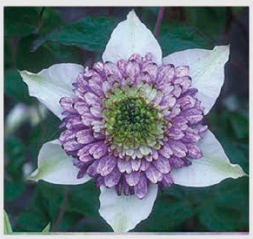


C. **'Jacqueline du Pré'**
[group 1]

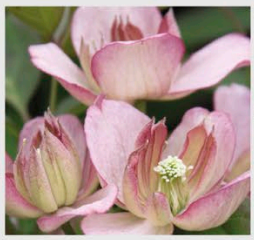
C. montana **var.** *rubens*
'Tetrarose' [group 1]

C. **'Lincoln Star'**
[group 2]

C. **'Jan Lindmark'** [group 1]

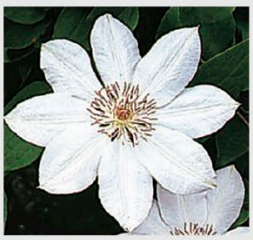


C. VIENNETTA **('Evipo006')**
[group 3]



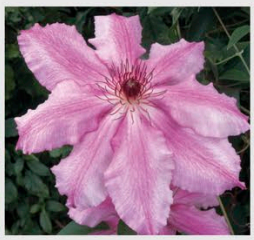
C. **'Sunrise'** [group 1]

C. **'Corona'** [group 2]



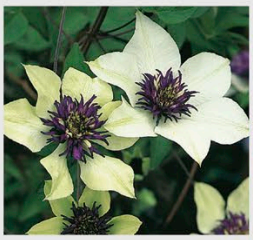
C. **'Henryi'** [group 2]

C. HAPPY BIRTHDAY **('Zohapbi')**
[group 3]



C. **'Charissima'**
[group 2]

C. **'Nelly Moser'**
[group 2]



C. florida **'Sieboldiana'**
[group 3]

C. **'Huldine'** [group 3]

C. **'Barbara Jackman'** [group 2]

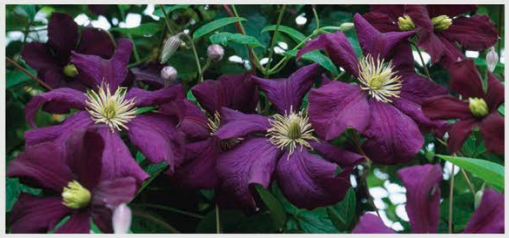
C. **'Barbara Dibley'** [group 2]

C. **'Kakio'** [group 2]

C. **'Abundance'** [group 3]

C. **'Madame Julia Correvon'** [group 3]

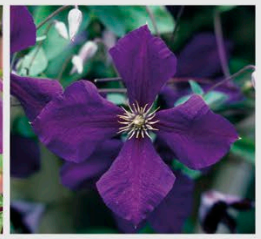
C. **'Gravetye Beauty'** [group 3]



C. **'Étoile Violette'** [group 3]

C. **'Purpurea Plena Elegans'** [group 3]

C. **'Rosy O'Grady'** [group 1]



C. **'Jackmanii'** [group 3]

C. AVANT-GARDE **('Evipo033')** [group 3]

C. ROSEMOOR **('Evipo002')** [group 2]

C. **'Westerplatte'** [group 2]

C. BOURBON **('Evipo018')** [group 2]

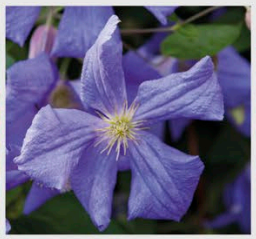
C. ANNA LOUISE **('Evithree')** [group 2]

C. cirrhosa var. *purpurascens* **'Freckles'** [group 1]

C. VINO **('Poulvo')** [group 2]

C. **'Ernest Markham'** [group 3]

C. **'Polish Spirit'** [group 3]



C. **'Perle d'Azur'** [group 3]

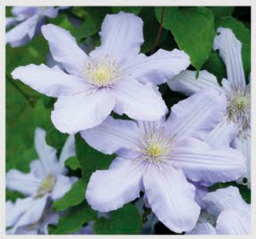
C. **'Frankie'** [group 1]

C. **'Frances Rivis'** [group 1]

C. **'Kardynał Wyszyński'** [group 2]

C. **'Black Prince'** [group 3]

C. **'Columella'** [group 1]



C. **'Silver Moon'** [group 2]

C. **'Betty Corning'** [group 3]

*C. **flammula*** [group 3]

*C. **rehderiana*** [group 3]

PINK

Lathyrus odoratus
'Mrs. Bernard Jones'
Vigorous, annual, tendril climber with mid-green leaves. Produces large, strongly scented, wavy-edged, sugar-pink flowers, suffused white at the margins, from summer to early fall. **H** 6ft (2m).

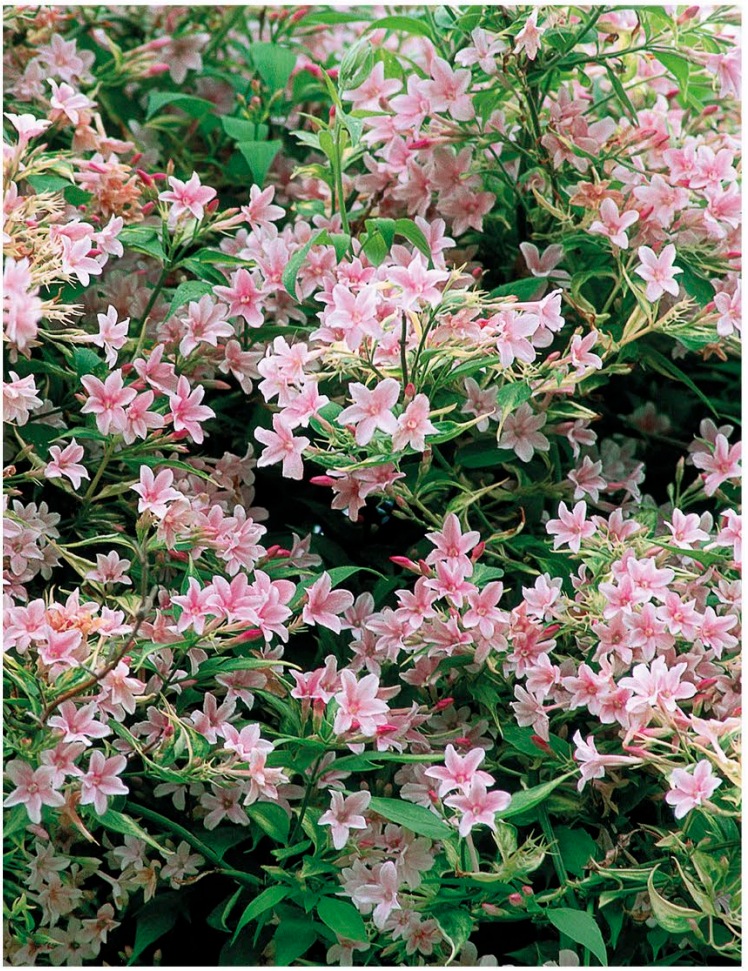
☼ ◊ Z9–10 ⓘ

Actinidia kolomikta
Deciduous, woody-stemmed, twining climber with 3–6in (8–16cm) long leaves, the upper sections often creamy-white and pink. Bears small, cup-shaped, white flowers in summer, male and female on separate plants. **H** 12ft (4m).

☼ ◊ Z5–8

Lathyrus latifolius
(Everlasting pea, Perennial pea)
Herbaceous, tendril climber with winged stems. Leaves have broad stipules and a pair of leaflets. Bears small racemes of pink-purple flowers in summer and early fall. **H** 6ft (2m) or more.

☼ ◊ Z5–9 ⓘ

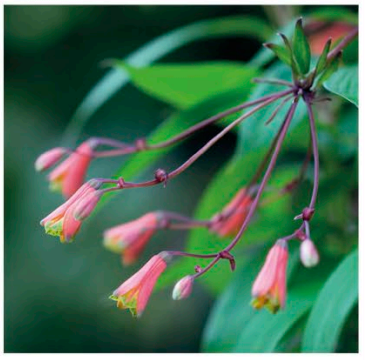


Jasminum* x *stephanense
Vigorous, deciduous, twining climber with simple or pinnate, matte green leaves. Produces loose clusters of fragrant, 5-lobed, pale pink flowers, from early to midsummer, sometimes producing a second flush later in the season. **H** 16–22ft (5–7m).

◐ ◊ Z7–11

***Grevillea* 'Canberra Gem'**
Vigorous, evergreen shrub with silky stems and linear, pointed, green leaves, to 1¼in (3cm) long. Late winter to midsummer, and occasionally through the year, produces short racemes of small, tubular, white-tipped, pink-red flowers. **H** and **S** 6–13ft (2–4m).

☼ ◊ pH Z9–11 ⓘ



Bomarea edulis
Deciduous, twining climber with lance-shaped, mid-green leaves. From early summer to fall, bears umbellike clusters of narrowly bell-shaped flowers, to 1½in (3.5cm) long, pink–light red, with yellow-flecked throats. **H** 6–10ft (2–3m).

☼ ◊ Z11

RED

Cestrum* x *cultum
Vigorous, evergreen, arching shrub. Nodding shoots carry downy, deep green foliage. Dense racemes of tubular, purplish-red flowers in late spring and summer are followed by deep red fruits. **H** and **S** 10ft (3m). Min. 41ºF (5ºC)

☼ ◊ Z9–10

Lapageria rosea
(Chilean bellflower, Copihue)
Evergreen, woody-stemmed, twining climber with oblong to ovate, leathery leaves. Has pendent, fleshy, pink to red flowers, 2¾–3½in (7–9cm) long, with paler flecks, from summer to late fall. **H** to 15ft (5m).

◑ ◊ Z10–11

Schisandra rubriflora
Deciduous, woody-stemmed, twining climber with leathery, toothed leaves, paler beneath. Has small, crimson flowers in spring or early summer and drooping, red fruits in late summer. **H** to 20ft (6m).

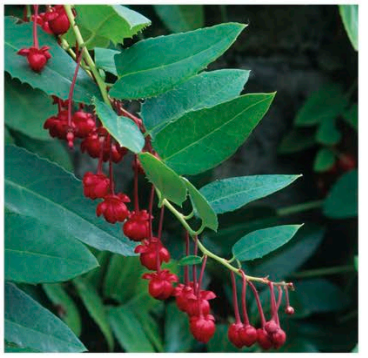
◑ ◊ Z7–9

Ipomoea lobata
Deciduous or semievergreen, twining climber with 3-lobed leaves, usually grown as an annual. One-sided racemes of small, tubular, dark red flowers fade to orange, then creamy-yellow, in summer. **H** to 15ft (5m). Min. 45ºF (7ºC)

☼ ◊ Z10–11 ⓘ

Tropaeolum speciosum
(Flame creeper, Flame nasturtium)
Herbaceous, twining climber with a creeping rhizome and lobed, blue-green leaves. Bears scarlet flowers in summer, followed by bright blue fruits surrounded by deep red calyces. Roots should be in shade. **H** to 10ft (3m).

☼ ◊ Z8–11



Berberidopsis corallina (Coral plant)
Evergreen, woody-stemmed, twining climber with ovate to heart-shaped, leathery leaves edged with small spines. Bears pendent clusters of globular, deep red flowers in summer to early fall. **H** 14ft (4.5m).

◑ ◊ pH Z8–9

Ipomoea quamoclit (Cypress vine)
Annual, twining climber with ovate, bright green leaves cut into many threadlike segments. Slender, tubular, orange or scarlet flowers are carried in summer–fall. **H** 6–12ft (2–4m). Min. 45ºF (7ºC)

☼ ◊ Z9–10 ⓘ

Crinodendron hookerianum
(Lantern tree)
Evergreen, stiffly-branched shrub. In late spring and early summer, lanternlike, red flowers hang from shoots clothed with narrow, dark green leaves. **H** 20ft (6m), **S** 15ft (5m).

◑ ◐ pH Z9–11

Desfontainia spinosa
Evergreen, bushy, dense shrub with spiny, hollylike, glossy, dark green leaves. Long, tubular, drooping, red flowers, tipped with yellow, are borne from midsummer to late fall.
H and **S** 6ft (2m).

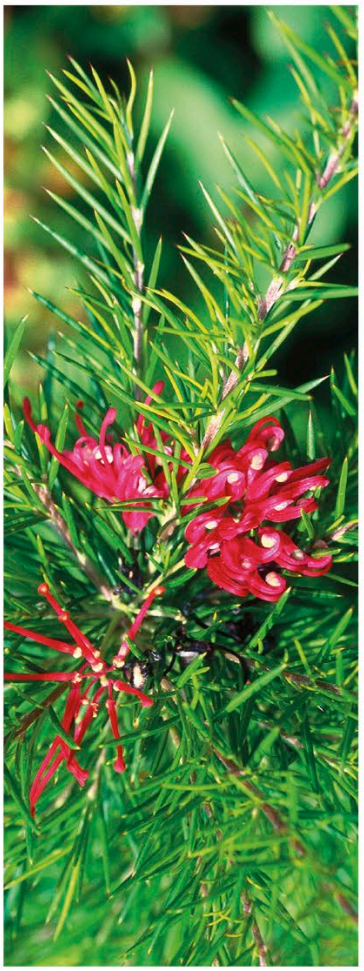
☀ ◑ pH Z8–11

***Callistemon citrinus* 'Splendens'**
(Crimson bottlebrush)
Evergreen, arching shrub with broad, lemon-scented, gray-green leaves that are bronze-red when young. In early summer bright red flowers are borne in bottlebrushlike spikes. **H** 6–25ft (2–8m), **S** 5–20ft (1.5–6m).

☀ ◑ Z10–11

Acca sellowiana (Pineapple guava)
Evergreen, bushy shrub or tree. Dark green leaves have white undersides. In midsummer bears large, dark red flowers with white-edged petals, followed by edible, red-tinged, green fruits. **H** 6ft (2m), **S** 8ft (2.5m).

☀ ◑ Z8–11



Grevillea rosmarinifolia
Evergreen, rounded, well-branched shrub. Dark green leaves are needle-shaped with reflexed margins, silky-haired beneath. Has short, dense clusters of tubular, red, occasionally pink or white flowers in summer.
H 2–10ft (0.6–3m), **S** 3–15ft (1–5m).

☀ ◑ pH Z9–11

Campsis grandiflora
Deciduous, woody-stemmed, root climber. Leaves have 7 or 9 ovate, toothed leaflets. Drooping clusters of trumpet-shaped, orange or red flowers, 2–3in (5–8cm) long, are produced in late summer and fall, abundantly in warm areas. **H** 22–30ft (7–10m).

☀ ◑ Z7–9

Callistemon subulatus
Evergreen, arching shrub with narrowly oblong, bright green leaves. Dense spikes of crimson flowers are produced in summer. **H** 5ft (1.5m), **S** 6ft (2m).

☀ ◑ Z8–11

***Cestrum* 'Newellii'**
Evergreen, arching shrub bearing clusters of tubular, crimson flowers in late spring and summer. Leaves are large, broadly lance-shaped and dark green. **H** and **S** 10ft (3m).

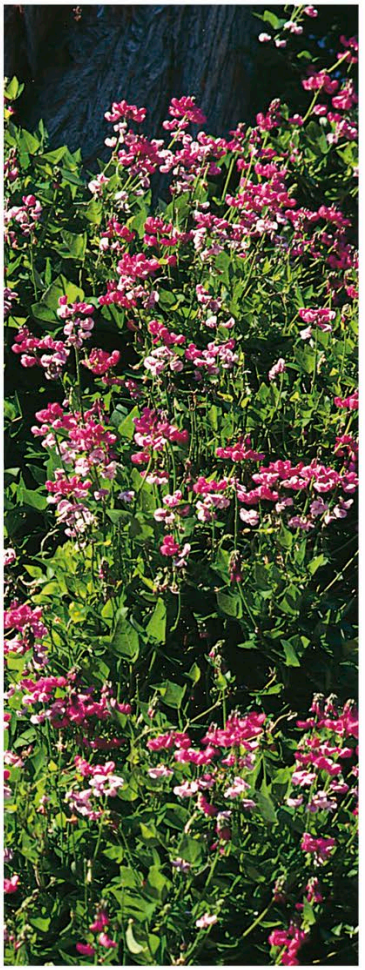
☀ ◑ Z8–11

Abutilon megapotamicum
Evergreen shrub with long, slender branches normally trained against a wall. Pendent, bell-shaped, yellow-and-red flowers are produced from late spring to fall. Leaves are ovate, with heart-shaped bases, and dark green.
H and **S** 6ft (2m).

☀ ◑ Z8–10

Rhodochiton atrosanguineus
Evergreen, leaf-stalk climber, usually grown as an annual, with toothed leaves. Has tubular, blackish-purple flowers, with bell-shaped, red-purple calyces, from late spring to late fall.
H to 10ft (3m). Min. 41°F (5°C).

☀ ◑ Z10–11



Lablab purpureus (Australian pea, Hyacinth bean, Lablab)
Deciduous, woody-stemmed, twining climber, often grown as an annual. Purple, pinkish or white flowers in summer are followed by long pods with edible seeds. **H** 30ft (10m).
Min. 45°F (7°C)

☀ ◑ Z9–11

PURPLE

Akebia trifoliata
Deciduous, woody-stemmed, twining climber. Mid-green leaves, bronze-tinted when young, have 3 ovate leaflets. Drooping racemes of purple flowers in spring are followed by sausage-shaped, purplish fruits. **H** to 30ft (10m) or more.

☼ ◊ Z5–8

Passiflora caerulea
(Common passion flower)
Fast-growing, evergreen or semievergreen, woody-stemmed, tendril climber. Has white flowers, sometimes pink-flushed, with blue- or purple-banded crowns, in summer-fall. **H** 30ft (10m).

☼ ◊ Z6–9 ⓘ

Buddleja crispa
Deciduous, upright, bushy shrub that, from mid- to late summer, bears racemes of small, fragrant, lilac flowers with white eyes. Has woolly, white shoots and ovate, grayish-green leaves. **H** and **S** 10ft (3m).

☼ ◊ Z8–9

Cobaea scandens
(Cup-and-saucer vine)
Evergreen or deciduous, woody-stemmed, tendril climber, grown as an annual. From late summer to first frosts has flowers that open yellow-green and age to purple. **H** 12–15ft (4–5m). Min. 41°F (5°C).

☼ ◊ Z11

Fabiana imbricata* f. *violacea
Evergreen, upright shrub with shoots that are densely covered with tiny, heathlike, deep green leaves. Tubular, lilac flowers are borne profusely in early summer. **H** and **S** 8ft (2.5m).

☼ ◊ Z9–11

Aristolochia macrophylla
(Dutchman's pipe)
Vigorous, deciduous climber with heart-shaped, dark green leaves, to 12in (30cm) long. In summer produces malodorous, trumpet-shaped, cream-colored flowers, strongly mottled yellow, purple, and brown. **H** 30ft (10m).

◐ ◊ Z5–8

Aconitum hemsleyanum
Wiry, scandent, fibrous perennial with hooded, lilac flowers produced in drooping clusters in late summer. Leaves are divided and mid-green. Is best grown where it can scramble through a shrub or be supported. **H** 6–8ft (2–2.5m), **S** 3–4ft (1–1.2m).

◐ ◊ Z5–8 ⓘ

***Solanum crispum* 'Glasnevin'**
(Chilean potato tree)
Vigorous, evergreen or semievergreen, woody-stemmed, scrambling climber with ovate leaves. Has clusters of lilac to purple flowers, 1in (2.5cm) across, in summer. **H** to 20ft (6m).

☼ ◊ Z9–15 ⓘ

BLUE

Pseudocodon convolvulacea
Herbaceous, twining climber with 1–2in (5cm) long, ovate or lance-shaped leaves. Widely bell- to saucer-shaped, bluish-violet flowers, 1–2in (5cm) across, are borne in summer. **H** to 6ft (2m).

☀ ◐ 💧 Z7–9

Plumbago auriculata (Cape leadwort)
Fast-growing, evergreen, woody-stemmed, scrambling climber. Trusses of sky-blue flowers are carried from summer to early winter.
H 10–20ft (3–6m).

☀ 💧 Z10

***Ceanothus* 'Puget Blue'**
Vigorous, evergreen, spreading shrub with arching branches clothed with small, ovate, wrinkled, dark green leaves. In mid-spring produces abundant clusters of small, deep blue flowers. Is best grown trained as a wall shrub.
H and **S** 10–13ft (3–4m).

☀ 💧 Z8–11

***Ipomoea tricolor* 'Heavenly Blue'** (Morning glory)
Fast-growing, annual, twining climber with heart-shaped leaves and large, funnel-shaped, sky-blue flowers borne from summer to early fall.
H to 10ft (3m). Min. 45°F (7°C).

☀ 💧 Z11 ⓘ

***Ceanothus* 'Burkwoodii'**
Evergreen, bushy, dense shrub producing dense panicles of bright blue flowers from midsummer to mid-fall. Has ovate, glossy, dark green leaves, downy and gray beneath. **H** 5ft (1.5m), **S** 6ft (2m).

☀ 💧 Z9–10

WISTERIA

Wisterias are large, vigorous, deciduous climbers that flower from late spring to early summer, producing pendent racemes, 18in (45cm) long or more, of scented, pealike flowers. These open in shades of white, through pale lilac-blue, to dark purple, and are sweetly scented. Often seen growing over the front of buildings, wisterias need strong support as they become heavy with age, and their roots may damage building foundations. They prefer fertile, moist, well-drained soil in full sun or partial shade. Unless the soil is very poor, don't fertilize them, as this encourages excess growth. Choosing wisteria can be confusing because many varieties are commonly mislabeled.

***W. brachybotrys* f. *albiflora* 'Shiro-kapitan'** ⓘ

***W. floribunda* f. *rosea* 'Hon-beni'** ⓘ

W. frutescens ⓘ

***W. frutescens* var. *frutescens* 'Longwood Purple'** ⓘ

***W. frutescens* var. *frutescens* 'Amethyst Falls'** ⓘ

***W. floribunda* f. *plenifora* 'Yae-kokuryu'** ⓘ

***W. sinensis* 'Prolific'** ⓘ

YELLOW

Thladiantha dubia
Fast-growing, herbaceous or deciduous, tendril climber. Ovate to heart-shaped, mid-green leaves, 4in (10cm) long, are hairy beneath; bell-shaped, yellow flowers are carried in summer.
H 10ft (3m).

☼ ◊ Z8–11

Grevillea juniperina* f. *sulphurea
Evergreen, rounded, bushy shrub with almost needlelike leaves, recurved and dark green above, silky-haired beneath. Has clusters of small, spidery, pale yellow flowers in spring–summer.
H 5–6ft (1.5–2m), **S** 6–10ft (2–3m).

☼ ◊ pH Z9–11 !

***Hypericum* 'Rowallane'**
Semievergreen, arching shrub with ovate, rich green leaves. Bears large, bowl-shaped, deep golden-yellow flowers from midsummer to mid- or late fall. Is cut to ground level in severe winters. **H** to 6ft (1.8m), **S** to 3ft (1m).

◐ ◊ Z7–9

Dendromecon rigida
Vigorous, evergreen, upright shrub, best grown against a wall. Large, fragrant, golden-yellow flowers appear amid gray-green foliage from spring to fall. **H** and **S** 10ft (3m).

☼ ◊ Z9–11

CLIMBERS AND WALL SHRUBS

***Fremontodendron* 'California Glory'**
Very vigorous, evergreen or semievergreen, upright shrub. Has rounded, lobed, dark green leaves and large, bright yellow flowers from late spring to mid-fall. **H** 20ft (6m), **S** 12ft (4m).

☼ ◊ Z8–10 !

***Jasminum humile* 'Revolutum'**
Evergreen, bushy shrub with glossy, bright green leaves divided into 3–7 ovate leaflets. Bears large, fragrant, tubular, upright, bright yellow flowers, with 5 spreading lobes, on long, slender, green shoots from early spring to late fall. **H** 8ft (2.5m), **S** 10ft (3m).

☼ ◊ Z7–9

Lonicera* x *americana (Honeysuckle)
Very free-flowering, deciduous, woody-stemmed, twining climber. Leaves are ovate, upper ones united and saucerlike. Has clusters of strongly fragrant, yellow flowers, flushed with red-purple, in summer. **H** to 23ft (7m).

◐ ◊ Z6–9 !

Piptanthus nepalensis
Deciduous or semievergreen, open shrub with leaves consisting of 3 large, dark blue-green leaflets. Racemes of pealike, bright yellow flowers appear in spring–summer. **H** 8ft (2.5m), **S** 6ft (2m).

☼ ◊ Z11

Campsis radicans* f. *flava
Deciduous, woody-stemmed, root climber with leaves divided into 7–11 ovate, toothed leaflets, downy beneath. Small clusters of trumpet-shaped, yellow flowers, 2½–3in (6–8cm) long, are produced in late summer and early fall. **H** 40ft (12m).

☼ ◊ Z5–9

ORANGE

Thunbergia alata (Black-eyed Susan)
Moderately fast-growing, annual, twining climber. Has toothed, ovate to heart-shaped leaves and rounded, rather flat, small flowers, orange-yellow with very dark brown centers, from early summer to early fall. **H** 10ft (3m). Min. 45°F (7°C).

☼ ◊Z11–15

***Tropaeolum tuberosum* var. *lineamaculatum* 'Ken Aslet'**
Herbaceous climber with yellowish, red-streaked tubers and blue-green leaves. From mid-summer to fall has flowers with red sepals and orange petals. In cool areas, lift and store tubers in winter. **H** to 8ft (2.5m).

☼ ◊Z8–15

Bomarea multiflora
Herbaceous, twining climber with rounded clusters of 5–40 tubular to funnel-shaped, orange-red flowers, spotted crimson within, in summer. **H** 10–12ft (3–4m).

☼ ◊Z11

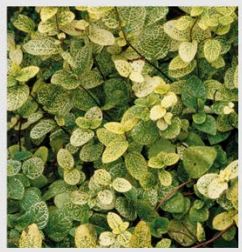
HONEYSUCKLE

Fragrant, colorful and easy to grow, honeysuckles (*Lonicera*) can illuminate a border, wall, or fence with their distinctive blooms. They are mainly cultivated for their flowers, which are tubular or funnel- to bell-shaped, and come in a range of colors, from the bright golden-yellow of *L. etrusca* 'Superba', to the deep scarlet-orange of *L. sempervirens*. The genus includes deciduous, semievergreen or evergreen shrubs and twining climbers, which have a sweet fragrance that intensifies at night. Honeysuckles need fertile, well-drained soil, in sun or partial shade. Prune back young growth soon after flowering. Most produce berries, which should not be eaten.

***L. etrusca* 'Superba'**

***L. etrusca* 'Michael Rosse'**

L. sempervirens ①



***L. japonica* 'Aureoreticulata'**

L. henryi

***L. periclymenum* Serotina Group**

ORANGE

Eccremocarpus scaber
(Chilean glory flower)
Evergreen, subshrubby, tendril climber, often grown as an annual. In summer has racemes of small, orange-red flowers, followed by inflated fruit pods containing many winged seeds.
H 6–10ft (2–3m).

☼ ◊ Z11

Mutisia decurrens
Evergreen, tendril climber with narrowly oblong leaves, 2¾–5in (7–13cm) long. Flower heads, 4–5in (10–13cm) across with red or orange ray flowers, are produced in summer. Proves difficult to establish, but is worthwhile.
H to 10ft (3m).

☼ ◊ Z8–9

***Campsis radicans* 'Flamenco'**
Deciduous, woody-stemmed, root climber with leaves divided into 7–11 ovate, toothed leaflets, downy beneath. Small clusters of trumpet-shaped, orange-red flowers, 2½–3in (6–8cm) long, are produced in late summer and early fall. **H** 40ft (12m).

☼ ◊ Z5–9

WHITE

Fallopia baldschuanica
(Mile-a-minute plant, Russian vine)
Vigorous, deciduous, woody-stemmed, twining climber with drooping panicles of pink or white flowers in summer–fall.
H 40ft (12m) or more.

☼ ◑ Z5–9

Jasminum polyanthum
Evergreen, woody-stemmed, twining climber. Dark green leaves have 5 or 7 leaflets. Large clusters of fragrant, 5-lobed, white flowers, sometimes reddish on the outside, are carried from late summer to winter.
H 10ft (3m) or more.

☼ ◊ Z9–10

RED

***Campsis* x *tagliabuana* 'Madame Galen'**
Deciduous, woody-stemmed, root climber with leaves of 7 or more narrowly ovate, toothed leaflets. Trumpet-shaped, orange-red flowers are borne in pendent clusters from late summer to fall. **H** to 30ft (10m).

☼ ◊ Z5–9

***Vitis* 'Brant'**
Deciduous, woody-stemmed, tendril climber with lobed, toothed, green leaves, 4–9in (10–22cm) long. In fall leaves mature to brown-red, except for the veins. Produces tiny flowers in summer, followed by green or purple fruits. **H** to 22ft (7m) or more.

◑ ◊ Z5–9

Cotoneaster horizontalis (Wall-spray)
Deciduous, stiff-branched, spreading shrub. Glossy, dark green leaves redden in late fall. Bears pinkish-white flowers from late spring to early summer, followed by red fruits.
H 3ft (1m), **S** 5ft (1.5m).

☼ ◊ Z6–9 ⓘ

Parthenocissus tricuspidata
(Boston ivy, Japanese ivy)
Vigorous, deciduous, woody-stemmed, tendril climber. Has spectacular, crimson, fall leaf color and dull blue berries. Will cover large expanses of wall. **H** to 70ft (20m).

◑ ◊ Z4–8 ⓘ

Vitis coignetiae (Crimson glory vine)
Vigorous, deciduous, woody-stemmed, tendril climber. Large leaves, brown-haired beneath, are brightly colored in fall. Has tiny, pale green flowers in summer, followed by purplish-bloomed, black berries. **H** to 50ft (15m).

◑ ◊ Z4–8

Cayratia thomsonii
Deciduous, woody-stemmed, tendril climber. Has glossy, green leaves with 5 leaflets that turn red-purple in fall, and black berries. Provide some shade for best fall color. **H** to 30ft (10m).

◑ ◊ Z4–8 ⓘ

***Parthenocissus tricuspidata* 'Lowii'**
Vigorous, deciduous, woody-stemmed, tendril climber with deeply cut and crinkled, 3–7-lobed leaves that turn crimson in fall. Has insignificant flowers, followed by dull blue berries. **H** to 70ft (20m).

◑ ◊ Z4–8 ⓘ

PURPLE

Billardiera longiflora
Evergreen, woody-stemmed, twining climber with narrow leaves. Small, bell-shaped, sometimes purple-tinged, green-yellow flowers are produced singly in leaf axils in summer, followed by purple-blue fruits in fall.
H to 6ft (2m).

☼ ◊ Z8–9

***Vitis vinifera* 'Purpurea'**
Deciduous, woody-stemmed, tendril climber with toothed, 3- or 5-lobed, purplish leaves, white-haired when young. Has tiny, pale green flowers in summer and tiny, green or purple berries. **H** to 23ft (7m).

☼ ◊ Z6–9

***Parthenocissus tricuspidata* 'Veitchii'**
Vigorous, deciduous, woody-stemmed, tendril climber. Has spectacular, red-purple, fall leaf color and dull blue berries. Greenish flowers are insignificant. **H** to 70ft (20m).

☼ ◊ Z4–8 ⓘ

Ampelopsis megalophylla
Vigorous, deciduous climber with glaucous shoots and large, pinnate to 2-pinnate, dark green leaves, glaucous beneath. Axillary clusters of small, green flowers, in summer, are followed by small, top-shaped, purple fruits that later turn black. **H** 30ft (10m).

☼ ◊ Z5–8

Ampelopsis brevipedunculata* var. *maximowiczii
Vigorous, deciduous, woody-stemmed twining, tendril climber with dark green leaves that vary in size and shape. Bears inconspicuous, greenish flowers in summer, followed by pinkish-purple, later bright blue berries. **H** to 15ft (5m).

☼ ◊ Z5–8

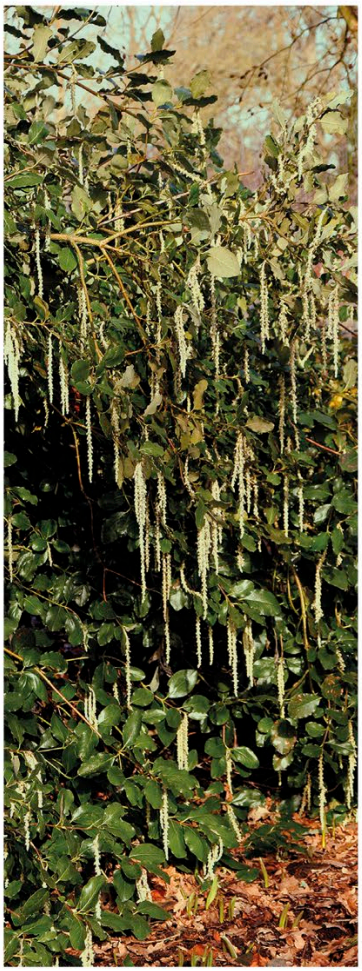
GREEN

***Hedera helix* 'Glacier'**
Vigorous, evergreen, self-clinging climber or trailing perennial bearing 5-lobed, silvery-gray-green leaves.
H 10ft (3m).

☀ 💧Z5–11 ⓘ

x *Fatshedera lizei* (Tree ivy)
Evergreen, loose-branched shrub that forms a mound of deeply lobed, glossy, deep green leaves. May also be trained as a climber. Sprays of small, white flowers appear in fall.
H 4–6ft (1.2–2m), **S** 10ft (3m).

☀ 💧Z8–11



***Garrya elliptica* 'James Roof'**
Evergreen, bushy, dense shrub with ovate, wavy-edged, leathery, dark green leaves. Very long, gray-green catkins, with yellow anthers, are borne from mid- or late winter to early spring.
H and **S** 12ft (4m).

☀ 💧Z8–11

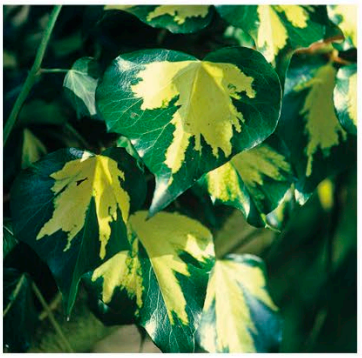
***Hedera colchica* 'Sulphur Heart'**
Evergreen, self-clinging climber or trailing perennial with large, ovate, unlobed leaves variegated yellow and light green. Is suitable for growing against a wall. **H** 15ft (5m).

☀ 💧Z6–11 ⓘ

YELLOW

Acacia dealbata
(Mimosa, Silver wattle)
Fast-growing, evergreen, spreading tree. Has feathery, blue-green leaves with many leaflets. Racemes of globular, fragrant, bright yellow flower heads are borne in winter–spring.
H 50ft (15m), **S** 50ft (15m).

☀ 💧Z9–11

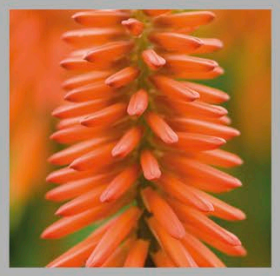


***Hedera helix* 'Oro di Bogliasco'**
Vigorous, evergreen, self-clinging climber or trailing perennial bearing 5-lobed, dark green leaves with bright yellow centers. Is slow to establish, then grows rapidly; is not suitable for ground cover. **H** 20ft (6m).

☀ 💧Z5–11 ⓘ

Itea ilicifolia
Evergreen, bushy shrub with arching shoots and ovate, sharply toothed, glossy, dark green leaves. Long, catkinlike racemes of small, greenish flowers appear in late summer and early fall. **H** 10–15ft (3–5m), **S** 10ft (3m).

☀ 💧Z7–9



PERENNIALS

One of the largest plant groups, perennials offer seasonal color, fragrance, form, and texture, with a wealth of plants to suit every size and style of garden. They are traditionally grown in herbaceous borders, using a wall or hedge as the backdrop for the main summer display, but since most gardens are not large enough for long borders solely devoted to perennials, they are usually grown in mixed borders, together with shrubs, annuals, biennials, and bulbs that extend the seasons of interest. Although some perennials are evergreen, most die back in fall and emerge again in spring. While this can leave borders bare in winter, the seedheads and dried stems of some perennials, including rudbeckias, echinops, and hylotelephiums, provide a beautiful display when others have disappeared.

PERENNIALS

One of the largest and most versatile plant groups, perennials offer a seasonally changing diversity of color, fragrance, form, and texture. The choice of perennials is vast, and there is a huge choice to suit any garden style, from traditional to modern.

SIZE CATEGORIES USED WITHIN THIS GROUP		
Large	Medium	Small
over 4ft (1.2m)	2–4ft (60cm–1.2m)	up to 2ft (60cm)

What are perennials?

Perennials are nonwoody plants that live for two or more years and, when mature, produce flowers annually. The term often includes grasses and ferns. Although some perennials are evergreen, most are herbaceous and will die back each fall, emerging again in spring.

Choosing perennials

When making your selections, first check that the plants suit the climate, exposure, soil type, and light levels in your garden. Plants struggling in unsuitable conditions will not fulfill their intended purpose if they fail to flower or grow to fill their allotted space. The best results are usually achieved by grouping plants with similar cultivation needs; you may also find inspiration for garden planting schemes by looking at natural landscapes for symbiotic planting groups. For example, a deciduous woodland may feature a range of shade-loving ferns that marry well together.

When perennials are massed together in borders, consider their eventual height and spread to ensure vigorous types do not overshadow or swamp more delicate plants.

Designing with perennials

Long herbaceous borders, often 10ft (3m) or more in depth, flanked by turf and backed by a wall or hedge, were traditionally planted with perennials that create a spectacular display in summer. Today, most people do not have space for such a scheme, and perennials are now more commonly used in smaller beds and borders with other plants, such as shrubs, bulbs, and annuals. However, the design ideas employed in these large borders can be used in more modest schemes, with tall plants sited at the back, midrange types in the middle, and compact perennials planted at the front, ensuring that all can be seen clearly and no plants are obscured by taller neighbors. Plants are grouped in swaths of three or more of the same species, which lends borders a visual unity and rhythm.

Groups of tall verbascums, eupatoriums, and delphiniums create a backdrop for the border plants in front, while low, ground-covering perennials such as *Cerastium tomentosum* and *Stachys byzantina* are ideal at the front. Superb effects can then be created by using large specimens as focal points, especially those that have an architectural form, such as cardoons (*Cynara cardunculus*) and bear's breeches (*Acanthus*), or a tall grass such as a miscanthus, or *Stipa gigantea*.

Introduce a variety of shapes and textures by combining the rounded forms of sedums, hylotelephiums, and geraniums with upright *Kniphofia* or salvias, for instance, or finely cut *Corydalis flexuosa* leaves with the bolder

ABOVE Frosted seed heads
Most perennials die down in winter, leaving borders bare, but a few, such as *Echinacea purpurea* 'Kim's Knee High' form decorative seed heads that remain for many months in winter.

LEFT Contrasting colors and forms
This design focuses on matching the blues and yellows of delphiniums, echinops, salvias, *Thalictrum flavum* subsp. *glaucum*, nepetas, verbascums, and foxgloves. Contrasting flower forms intensify the effect.

outlines of hostas in shady areas. Or use the stems of bleeding heart (*Lamprocapnos spectabilis*) and *Polygonatum* x *hybridum* to gracefully arch over shorter plants, such as heucheras and *Alchemilla mollis*.

When making your selections, consider the foliage shape, form, and texture as well as flower colors. The boldly pleated foliage of veratrums and delicate, pinnate leaves of *Polemonium caeruleum* are worthy of consideration, while furry verbascums are seductively tactile.

The disadvantage of planting herbaceous perennials is that the garden looks bare in winter, unless you plant sturdy types with long-lasting seedheads, such as rudbeckias, hylotelephiums, sedums, and grasses. These can be left to provide interest until new shoots appear in spring. Prairie-style schemes use these types of plants for year-round interest; rather than planting in long borders, perennials and grasses are used in large, bold groups, with tall see-through plants in front of shorter ones. Just a few plant species are used, and repeated to mirror nature. The effects of prairie schemes are best seen in larger gardens.

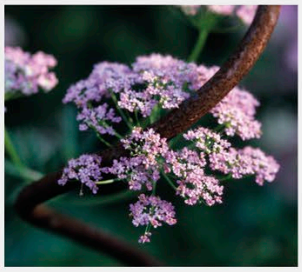
ABOVE **Contrasting foliage**
In damp, dappled shade, elegant contrasts of foliage form and texture create an atmosphere of lush abundance. A selection of bergenias, hostas, ferns, and ligularias are included in this lush scheme.

STAKING BORDER PERENNIALS

Many tall perennials, such as delphiniums and achilleas, become top-heavy and require some form of support. If you provide plant supports early in the season, the plants will grow through and disguise them. Plants staked at a later date, especially once they have already flopped, always tend to look trussed up.

Using canes
Bamboo canes are ideal for supporting tall flowers such as delphiniums. Use soft twine to tie the stems to the supports.

Using twiggy sticks
Plants with moundlike growth will grow through and be supported by twiggy sticks placed around stems in spring.



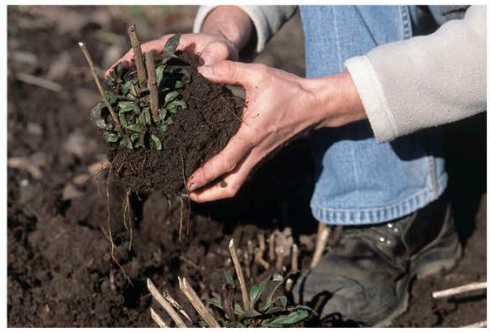
Using metal spirals
Metal spirals provide good support for perennials such as this *Pimpinella,* and also make decorative features.

DIVIDING PERENNIALS

This easy method of propagation can be used to propagate most herbaceous perennials as well as to rejuvenate large, tired clumps that are no longer flowering well. You can also divide newly bought perennials, providing they are large enough and have clearly divisible stems, to make the most of your purchases. Most perennials can be divided in fall or early spring just as the shoots appear.

1 Dig up the plant
In early spring, select a clump of plants and water them well. Cut back any old top growth to the ground. Using a fork, lift the clump of plants, being very careful to keep the whole rootball intact.

2 Divide with forks
Cut solid crowns into portions with a spade or old bread knife. If you cannot pry other pieces apart by hand, use two forks held back-to-back to split the clump into smaller sections.



3 Replant the divisions
Discard the dead central portions of overgrown clumps. Replant healthy, hand-sized pieces with strong buds in soil improved with well-rotted organic matter, such as manure. Water in well.

WHITE

Sanguisorba tenuifolia* var. *alba
Clump-forming, upright perennial with branched, slender stems and pinnate, toothed leaves. Pendent, bottlebrushlike spikes of fluffy, white flowers are borne in late summer. **H** 6ft (1.8m), **S** 3ft (90cm).

☼ ◑ Z9–7

Crambe cordifolia
Robust perennial with clouds of small, fragrant, white flowers borne in branching sprays in summer above mounds of large, crinkled and lobed, dark green leaves. **H** 6ft (2m) or more, **S** 4ft (1.2m).

☼ ◊ Z6–9

Artemisia lactiflora (White mugwort)
Vigorous, erect perennial. Many sprays of creamy-white buds open to off-white flowers in summer. Dark green leaves are jagged-toothed. Needs staking and is best as a foil to stronger colors. **H** 4–5ft (1.2–1.5m), **S** 20in (50cm).

☼ ◊ Z5–8

Romneya coulteri (Tree poppy)
Vigorous, bushy, shrubby perennial, grown for its large, fragrant, white flowers, with prominent centers of golden stamens, that are borne in late summer. Has deeply divided, gray leaves. **H** and **S** 6ft (2m).

☼ ◊ Z8–10

***Chamaenerion angustifolium* 'Album'** (White rosebay)
Vigorous, upright perennial bearing sprays of pure white flowers along wandlike stems in late summer. Leaves are small and lance-shaped. May spread. **H** 4–5ft (1.2–1.5m), **S** 20in (50cm) or more.

☼ ◊ Z3–7

Impatiens tinctoria
Vigorous, upright, tuberous perennial with fleshy, branched stems and ovate, toothed, dark green leaves. In late summer, produces large, night-scented, white-and-purple flowers. Needs shelter and fertile soil. **H** 5ft (1.5m), **S** 3ft (90cm).

☼ ◊ Z7–11

PINK

Eremurus robustus
Upright perennial with straplike leaves that die back during summer as huge racemes of cup-shaped, pink blooms appear. Cover crowns in winter with compost or bracken. Needs staking. **H** 7ft (2.2m), **S** 3ft (1m).

☼ ◊ Z5–8

***Macleaya microcarpa* 'Kelway's Coral Plume'**
Clump-forming perennial that in summer produces branching spikes of rich pink-buff flowers. Large, rounded, lobed leaves are gray-green above, gray-white beneath. **H** 6–8ft (2–2.5m), **S** 3–4ft (1–1.2m).

☼ ◊ Z4–9

PURPLE

Cynara cardunculus (Cardoon)
Stately perennial with large clumps of arching, pointed, divided, silver-gray leaves, above which rise large, thistlelike, blue-purple flower heads borne singly on stout, gray stems in summer. Flower heads dry well. **H** 6ft (2m), **S** 3ft (1m).

☼ ◊ Z7–10

Veratrum nigrum
(Black false hellebore)
Erect, stately perennial that from late summer onward bears long spikes of chocolate-purple flowers at the ends of stout, upright stems. Stems are clothed with ribbed, ovate to narrowly ovate leaves. **H** 6ft (2m), **S** 2ft (60cm).

◐ ◑ Z6–9 ⓘ

***Phormium* 'Dazzler'**
Evergreen, upright perennial with tufts of bold, stiff, pointed leaves in tones of yellow, salmon-pink, orange-red and bronze. Bluish-purple stems carry panicles of reddish flowers in summer. **H** 6–8ft (2–2.5m) in flower, **S** 3ft (1m).

☼ ◑ Z9–11

DELPHINIUMS

Delphiniums make a bold statement in summer gardens, with their elegant, showy spires of single or double flowers. Their classic color is blue, but hybrids are now available in a broad range of colors, from white and pastel shades of pink and lilac, to rich mauves, violet-purples, and new red selections. Grow tall delphiniums in a mixed border or island bed, and dwarf types in a rock garden. Plants thrive in full sun and well-drained soil and, apart from dwarf species and cultivars, all require staking securely to support their heavy flower spikes. In growth, water all plants freely, applying a balanced liquid fertilizer every 2–3 weeks. Deadhead by cutting spent flower spikes back to small, flowering sideshoots. Protect plants from slugs and snails.

D. 'Gillian Dallas' Ⓘ

D. 'Can-can' Ⓘ

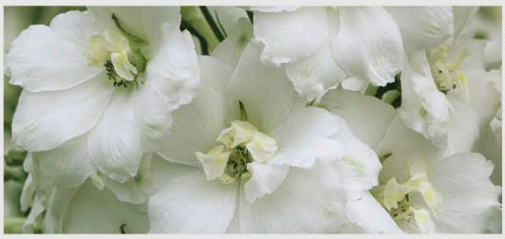
D. 'Olive Poppleton' Ⓘ

D. 'Sandpiper' Ⓘ

D. 'Langdon's Royal Flush' Ⓘ

D. 'Min' Ⓘ

D. 'Cliveden Beauty' Ⓘ



D. 'Elizabeth Cook' Ⓘ

D. 'Bruce' Ⓘ

D. 'Spindrift' Ⓘ

D. grandiflorum 'Blue Butterfly' Ⓘ

D. 'Red Caroline' Ⓘ

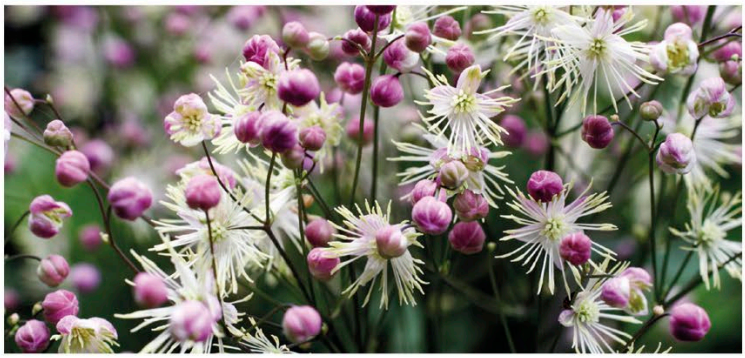
D. 'Lucia Sahin' Ⓘ

D. 'Michael Ayres' Ⓘ

D. 'Alice Artindale' Ⓘ

D. 'Loch Leven' Ⓘ

PURPLE



***Thalictrum* 'Elin'**
Clump-forming perennial with fernlike, blue-green leaves. Erect, sturdy, purplish-green stems bear billowing panicles of tiny, fluffy, creamy-yellow and purple flowers in summer.
H 8ft (2.5m), **S** 3ft (90cm) or more.

☼ 💧Z5–8

***Galega* x *hartlandii* 'Lady Wilson'**
Vigorous, upright perennial with spikes of small, pealike, blue and pinkish-white flowers in summer above bold leaves divided into ovate leaflets. Needs staking. **H** to 5ft (1.5m), **S** 3ft (1m).

☼ 💧Z5–11

BLUE

***Delphinium* 'Kestrel'**
Vigorous, perennial, Elatum Group delphinium with a branching habit and dark green leaves. In early summer, bears semidouble, rich blue flowers, 2½-3in (6–7cm) across, with dark brown eyes, on spikes to 3ft (90cm) long.
H to 6ft (2m), **S** 2–3ft (60–90cm).

☀ 💧 pH Z5–8

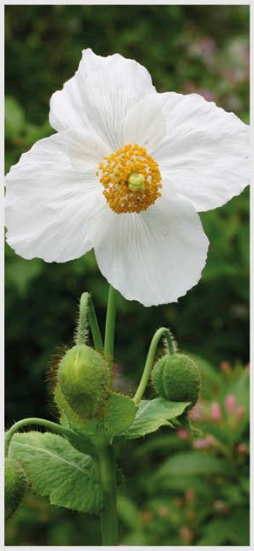
HIMALAYAN POPPIES

With delicate flowers in a wide range of colors, including beautiful shades of sky blue, *Meconopsis* (Himalayan poppies) are striking garden plants. Some also have attractive rosettes of foliage that develop slowly before the first flowers appear. Many are suited to moist, woodland conditions in light or partial shade, and acidic, well-drained soil; others are best treated as alpines in raised beds or troughs. All prefer cooler conditions. Most of the big blue poppy cultivars are sterile and very long-lived. Other *Meconopsis* are monocarpic perennials, living for a few years before flowering, setting seed, and then dying.

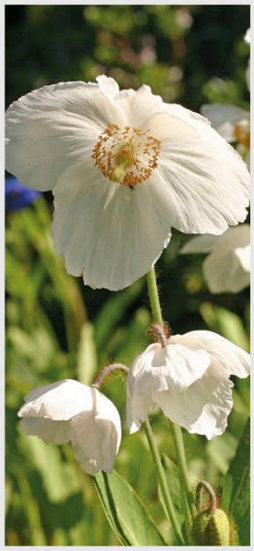
***M.* George Sherriff Group 'Jimmy Bayne'**

***M.* Infertile Blue Group 'Slieve Donard'**

***M.* Infertile Blue Group 'Crewdson Hybrid'**



M. baileyi* var. *alba



***M.* 'Marit'**

***M.* Fertile Blue Group 'Lingholm'**

M. grandis

***M.* x *cookei* 'Old Rose'**

***M. napaulensis* of gardens**

GREEN

Angelica archangelica (Angelica)
Upright perennial, usually grown as a biennial, with deeply divided, bright green leaves and white or green flowers in late summer. Stems have culinary usage and when crystallized may be used for confectionery decoration.
H 6ft (2m), **S** 3ft (1m).

☼ ◊ Z4–9

Musa basjoo (Japanese banana)
Evergreen, palmlike, suckering perennial with arching leaves to 3ft (1m) long. Has drooping, pale yellow flowers with brownish bracts in summer followed by green fruits.
H 10–15ft (3–5m), **S** 6–8ft (2–2.5m).

☼ ◊ Z8–11

YELLOW

Acanthus mollis **'Hollard's Gold'**
Semievergreen perennial with large, ovate, deeply cut, glossy leaves. New leaves are golden-yellow, fading to green. Spires of white and mauve flowers are borne in summer.
H 5ft (1.5m), **S** 2ft (60cm) or more.

◐ ◊ Z7–11

Verbascum olympicum
Semievergreen, rosette-forming biennial or short-lived perennial. Branching stems, arising from feltlike, gray foliage at the plant base, bear sprays of 5-lobed, bright golden flowers from midsummer onward.
H 6ft (2m), **S** 3ft (1m).

☼ ◊ Z5–9

Inula magnifica
Robust, clump-forming, upright perennial with a mass of lance-shaped to elliptic, rough leaves. Leafy stems bear terminal heads of large, daisylike, yellow flower heads in late summer. Needs staking. **H** 6ft (1.8m), **S** 3ft (1m).

☼ ◊ Z5–8

Ferula communis (Giant fennel)
Upright perennial. Large, cow-parsleylike umbels of yellow flowers are borne from late spring to summer on the tops of stems that arise from a mound of finely cut, mid-green foliage.
H 6–7ft (2–2.3m), **S** 3–4ft (1–1.2m).

☼ ◊ Z6–9

Ligularia **'The Rocket'**
Clump-forming perennial with triangular, deeply toothed leaves on tall stems. In summer, produces dark-stemmed racemes of daisylike, bright yellow flower heads.
H 6ft (1.8m), **S** 3ft (1m).

◐ ◊ Z4–8

Delphinium **'Sungleam'**
Herbaceous, Elatum Group perennial with spikes, 16–30in (40–75cm) long, of semidouble, white flowers, 2–3in (5–7cm) across, overlaid with pale yellow and with yellow eyes, produced in midsummer. **H** 5½–6ft (1.7–2m), **S** 2–3ft (60–90cm).

☼ ◊ Z3–7 !

ORANGE

***Hedychium* 'Tara'**
Erect, rhizomatous perennial with stout, leafy stems bearing lance-shaped, gray-green leaves. Cylindrical racemes of tubular, spidery, scented, orange flowers, with prominent stamens, are borne in late summer. **H** 5ft (1.5m), **S** 2ft (60cm) or more.

☼ ◊ Z8–10

***Eremurus* x *isabellinus* 'Cleopatra'**
Clump-forming perennial with narrowly strap-shaped, soft green leaves. In summer, produces stout, dense spikes of star-shaped, coppery-orange flowers. **H** 1.5m (5ft), **S** 50cm (20in).

☼ ◊ Z5–8

WHITE

Actaea simplex
Upright perennial with arching spikes of tiny, slightly fragrant, star-shaped, white flowers in fall. Leaves are glossy and divided. Needs staking. **H** 4–5ft (1.2–1.5m), **S** 2ft (60cm).

◐ ◊ Z4–8

Leucanthemella serotina
Erect perennial with lance-shaped, toothed, dark green leaves. Leafy stems produce sprays of large, green-centered, white flower heads in late fall. **H** 5ft (1.5m), **S** 3ft (90cm).

◐ ◊ Z4–9

***Anemone* x *hybrida* 'Honorine Jobert'**
Vigorous, branching perennial. Slightly cupped, white flowers with contrasting yellow stamens are borne on wiry stems in late summer and early fall above deeply divided, dark green leaves. **H** 5ft (1.5m), **S** 2ft (60cm).

◐ ◊ Z4–8 ⓘ

PINK

***Thalictrum delavayi* 'Hewitt's Double'**
Clump-forming perennial with fernlike, mid-green leaves. Bears large, billowing panicles of tiny, double, lavender flowers from late summer to fall. **H** 5ft (1.5m), **S** 2ft (60cm) or more.

☼ ◊ Z4–7

***Veronicastrum virginicum* 'Fascination'**
Upright perennial with stout stems bearing erect racemes of tiny, star-shaped, lavender flowers, darker at the tips, in mid- and late summer. Has lance-shaped, whorled, dark green leaves. **H** 5ft (1.5cm), **S** 16in (40cm).

☼ ◊ Z4–8

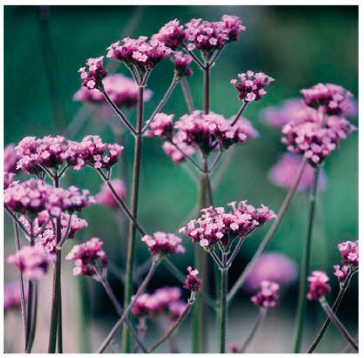
PURPLE

***Salvia involucrata* 'Bethellii'**
Subshrubby perennial that produces long racemes of large, cerise-crimson blooms, with pink bracts, in late summer and fall. Leaves are ovate to heart-shaped. **H** 4–5ft (1.2–1.5m), **S** 3ft (1m).

☼ 💧Z11–15

***Eupatorium maculatum* 'Riesenschirm'**
Upright, deciduous perennial with rounded, fluffy, purple-pink flower heads in late summer, which are attractive to insects. Ovate to lance-shaped, reddish-green leaves are arranged in whorls up purple stems. Superb for the back of a deep border. **H** 8ft (2.5m), **S** 5ft (1.5m).

☼ ◑Z5–11



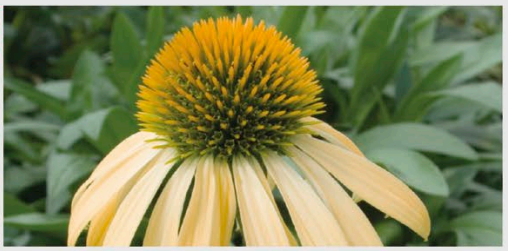
Verbena bonariensis
Perennial with a basal clump of dark green leaves. Upright, wiry stems carry tufts of tiny, purplish-blue flowers in summer–fall. **H** 5ft (1.5m), **S** 2ft (60cm).

☼ 💧Z7–11

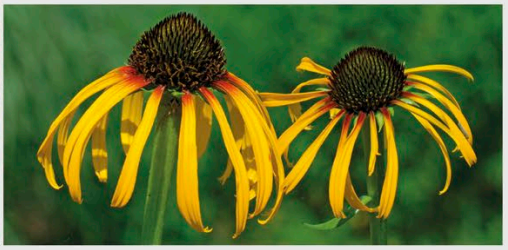
ECHINACEA

Admired for their cone- and daisylike flowers, *Echinacea* cultivars have expanded their repertoire; while once they were restricted to purple, pink, and white, a range of green, orange, yellow, and red flowers are now available, as well as double-flowered forms. They create bold and beautiful late summer and early fall displays, and the faded flower heads also offer structural interest into winter. Grow plants in well-drained, humus-rich soil in full sun, although they will tolerate some shade. Protect young plants from slug and snail damage.

E. angustifolia

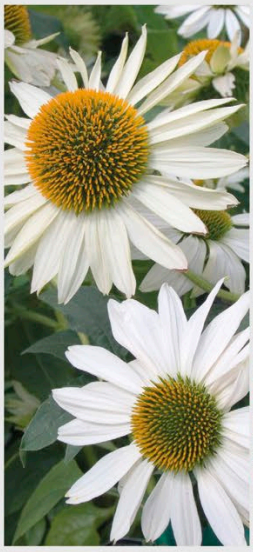


***E.* 'Harvest Moon'**

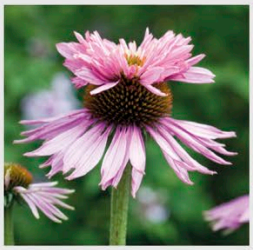


E. paradoxa

***E. purpurea* 'Coconut Lime'**



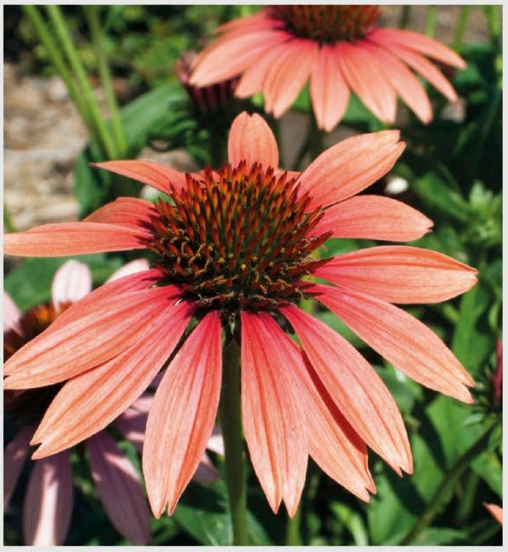
***E. purpurea* 'Fragrant Angel'**



***E. purpurea* 'Doubledecker'**

***E. purpurea* 'Razzmatazz'**

***E. purpurea* 'Magnus'**



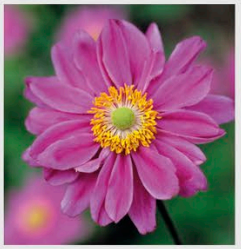
***E. purpurea* 'Sundown'**

JAPANESE ANEMONES

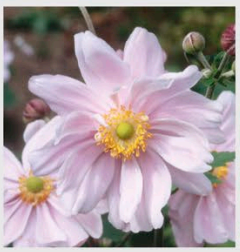
These useful plants fill the late summer and early fall garden with single or double flowers held on slender stems above handsome, divided, ground-covering foliage. The blooms are available in white and shades of pink and purple and are ideal for the middle to back of mixed borders, and in woodland gardens, injecting interest when many other flowers have faded. Border anemones are easy to grow, and thrive in a wide range of soil conditions and in sun or light shade. Once the plants are established, they develop into large clumps, which can be lifted and divided in fall or spring.

***A.* x *hybrida* 'Robustissima'**

***A. hupehensis* var. *japonica* 'Bressingham Glow'** ⓘ



***A. hupehensis* var. *japonica* 'Pamina'**



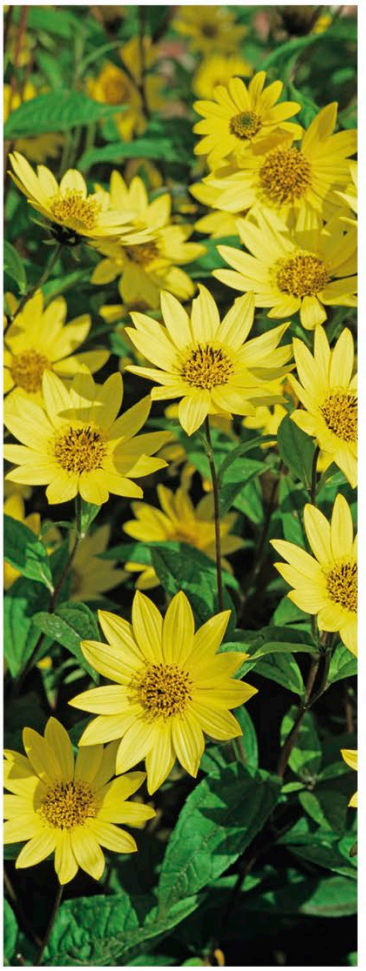
***A.* x *hybrida* 'Königin Charlotte'**

***A. hupehensis* 'Praecox'**

***A.* x *hybrida* 'September Charm'** ⓘ

***A.* x *hybrida* 'Whirlwind'**

***A. hupehensis* 'Bowles's Pink'**



***Helianthus* 'Lemon Queen'**
Vigorous, upright, rhizomatous perennial with stout, branched stems bearing ovate, rough, dark green leaves. Bears masses of large, daisylike, pale yellow flower heads in summer–fall. **H** 5ft (1.5m), **S** 2ft (60cm) or more.

☼ 💧Z4–9

***Rudbeckia laciniata* 'Goldquelle'**
Erect perennial. In late summer and fall, daisylike, double, bright yellow flower heads with green centers are borne singly on stout stems. Has deeply divided, mid-green foliage. **H** 5–6ft (1.5–2m), **S** 2–2½ft (60–75cm).

☼ 💧Z3–9

***Helianthus* x *multiflorus* 'Loddon Gold'**
Upright perennial bearing showy, large, vivid deep yellow flower heads with rounded, double centers in late summer and early fall. Needs staking and may spread quickly. **H** 5ft (1.5m), **S** 2ft (60cm).

☼ 💧Z5–9 ⓘ

Helianthus salicifolius
(Willow-leaved sunflower)
Upright, clump-forming perennial with whorls of lance-shaped, dark green leaves. Clusters of daisylike, yellow flowers are borne on branching stems in fall. Best at the back of a border. **H** 6ft (2m), **S** 2ft (60cm) or more.

☼ 💧Z6–9

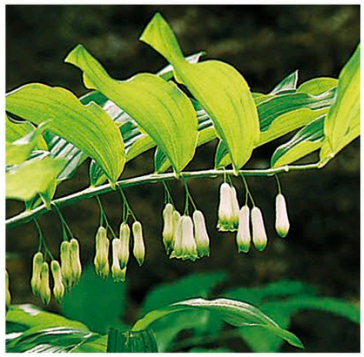
WHITE

Maianthemum racemosum
(False spikenard)
Arching perennial. Has ovate, light green leaves terminating in feathery sprays of white flowers that are borne from spring to midsummer, and are followed by fleshy, reddish fruits. **H** 30–36in (75–90cm), **S** 18in (45cm).

☼ ◑ Z4–9

Ranunculus aconitifolius
Vigorous, clump-forming perennial with deeply divided, dark green leaves. Single, white flowers, about 1in (3cm) across, are borne in spring and early summer. **H** and **S** 3ft (1m).

☼ ◑ Z5–9



Polygonatum* x *hybridum
(Solomon's seal)
Arching, leafy perennial with fleshy rhizomes. In late spring, clusters of small, pendent, tubular, greenish-white flowers are produced in axils of neat, ovate leaves. **H** 4ft (1.2m), **S** 3ft (1m).

☀ ◊ Z6–9 !

***Lamprocapnos spectabilis* 'Alba'**
Leafy perennial forming a hummock of fernlike, deeply cut, light green foliage with arching sprays of pendent, heart-shaped, pure white flowers in late spring and summer. **H** 24–30in (60–75cm), **S** 24in (60cm).

☼ ◊ Z3–9 !

PINK

Lamprocapnos spectabilis
(Bleeding heart, Dutchman's trousers)
Leafy perennial forming a hummock of fernlike, mid-green foliage, above which rise arching stems of pendent, heart-shaped, pinkish-red and white flowers in late spring and summer. **H** 30in (75cm), **S** 20in (50cm).

☼ ◊ Z3–9 !

Diascia personata
Semievergreen, semierect perennial with masses of lobed, dusky-pink flowers held in spires from late spring to the first frosts. Small, narrowly ovate, mid-green leaves are borne on rather lax, brittle stems, which require support. **H** 4ft (1.2m), **S** 3ft (90cm).

☼ ◊ Z8–9

PURPLE

***Aquilegia vulgaris* var. *stellata* 'Black Barlow'**
Clump-forming perennial with mid-green leaves divided into lobed leaflets. In late spring and early summer, bears double, dark purple flowers with spreading petals on many-branched stems. **H** 36in (90cm), **S** 18in (45cm).

☼ ◊ Z3–8

Geranium phaeum (Mourning widow)
Clump-forming perennial with lobed, soft green leaves and maroon-purple flowers, with reflexed petals, borne on rather lax stems in late spring. **H** 30in (75cm), **S** 18in (45cm).

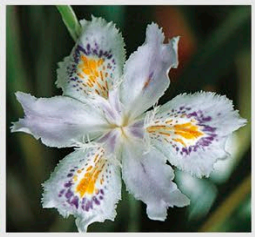
☀ ◊ Z4–8

IRISES

Few other perennials show such diversity of flower color as irises; and you will find one for almost every position in the garden. They have a long flowering season, the earliest appearing in the first months of the year, the latest in early fall. Their flowers often have "beards" (short hairs) or crests that add to their appeal, while a few are grown for their foliage or seed heads. The genus is classified into many divisions. Of these, the easiest to grow are the bearded, crested, and Xiphium irises. Siberian and Japanese types are ideal for bog gardens or watersides, but they will tolerate drier sites. Juno, Oncocyclus and Regelia irises are more difficult to grow, though their beautiful flowers are worth the effort. For more information, see the Plant Dictionary.

***I.* 'Ringo'** ⓘ [bearded]

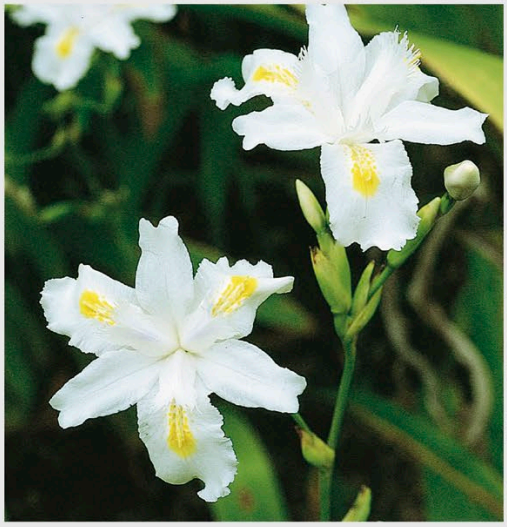
***I. ensata* 'Rose Queen'** ⓘ [bearded]



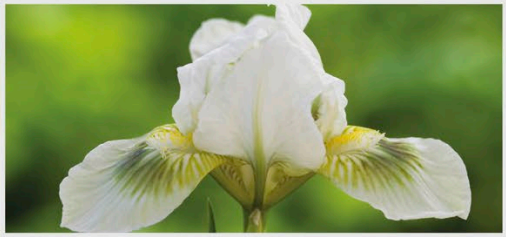
I. japonica ⓘ [Evansia]

***I.* 'Bold Print'** ⓘ [bearded]

I. hoogiana ⓘ [Regelia]



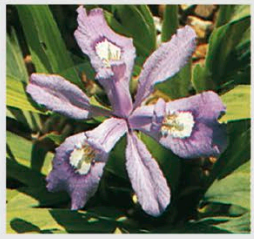
I. confusa ⓘ [crested]



***I.* 'Green Spot'** ⓘ [bearded]

***I. sanguinea* 'Snow Queen'** ⓘ [Siberian]

***I. ensata* 'Moonlight Waves'** ⓘ [beardless]



I. cristata ⓘ [Evansia]

***I.* 'Jane Phillips'** [bearded]

***I.* 'Dreaming Yellow'** ⓘ [Siberian]

***I.* 'Champagne Elegance'** ⓘ [bearded]

***I. germanica* 'Florentina'** ⓘ [bearded]

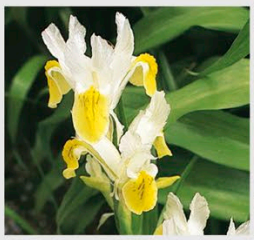
I. unguicularis* subsp. *cretensis ⓘ [beardless]

I. magnifica ⓘ [Juno]

***I.* 'Frost and Flame'** ⓘ [bearded]

I. orientalis ⓘ [Spuria]

***I.* 'Deep Black'** ⓘ [bearded]



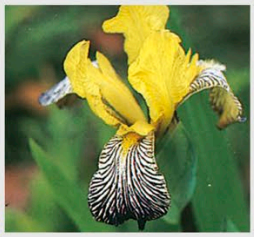
I. bucharica ⓘ [Juno]

***I.* 'English Cottage'** ⓘ [bearded]

I. **'Tropic Night'** ⓘ [Siberian]

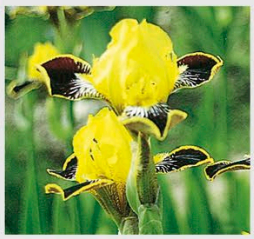
I. x ***robusta*** **'Gerald Darby'** ⓘ [beardless]

I. **'Eyebright'** ⓘ [bearded]



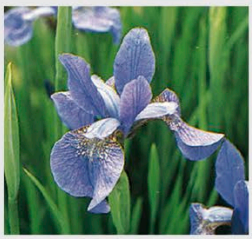
I. ***variegata*** ⓘ [bearded]

I. ***winogradowii*** ⓘ [Reticulata]



I. **'Bumblebee Deelite'** ⓘ [bearded]

I. ***pseudacorus*** ⓘ [beardless]

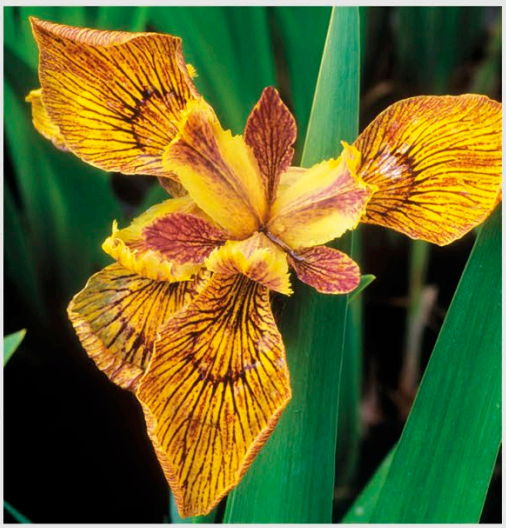


I. **'Mountain Lake'** ⓘ [Siberian]

I. ***reticulata*** **'Cantab'** ⓘ [Reticulata]

I. **'Perry's Blue'** ⓘ [Siberian]

I. **'Ola Kala'** ⓘ [bearded]



I. **'Berlin Tiger'** ⓘ [Japanese]

I. ***unguicularis*** **'Mary Barnard'** [beardless]

I. **'Soft Blue'** ⓘ [Siberian]

I. **'Katharine Hodgkin'** ⓘ [Reticulata]

I. **'Kent Pride'** ⓘ [bearded]

I. **'Holden Clough'** ⓘ [beardless]

I. **'Black Tie Affair'** [bearded]

I. ***chrysographes*** ⓘ [Siberian]

I. **'Blue Rhythm'** ⓘ [bearded]

I. ***foetidissima*** ⓘ [beardless]

I. **'Carnaby'** ⓘ [bearded]

AQUILEGIAS

Commonly known as columbines, *Aquilegia* are ideal cottage garden plants, well suited to growing in borders, rock gardens, and as fillers between summer-flowering shrubs. Most are graceful, elegant plants with divided basal foliage topped in late spring and summer by a succession of delicate, bell-shaped, usually spurred flowers, although some have rounded double blooms. They vary in color from light and dark blue, purple, almost black, dark red, and pink, to orange, yellow, and white; many are bicolored. *Aquilegia* thrive in moist but well-drained soil, and full sun or dappled shade. They are normally raised from seed, which is freely produced, and once established, they tend to self-seed, although most do not come true to type.

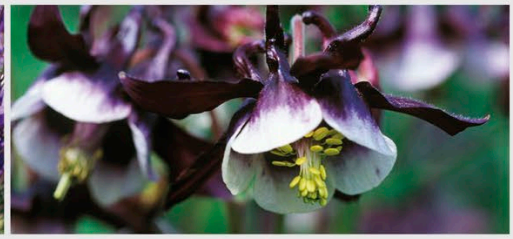
***A. vulgaris* var. *stellata* 'Ruby Port'**

A. flabellata* var. *pumila

***A.* 'Dove'** (Songbird Series)

***A.* 'Bluebird'** (Songbird Series)

***A.* 'Hensol Harebell'**



***A. vulgaris* 'William Guiness'**

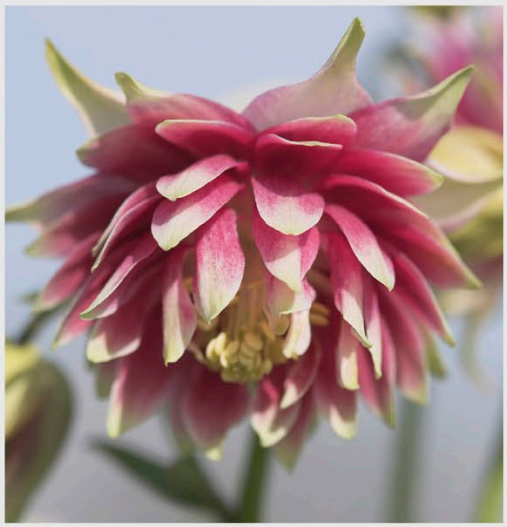
***A. vulgaris* 'Nivea'**

***A.* 'Dragonfly'**

A. coerulea

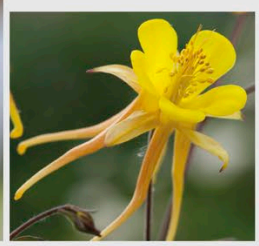
***A.* 'Bunting'** (Songbird Series)

A. viridiflora

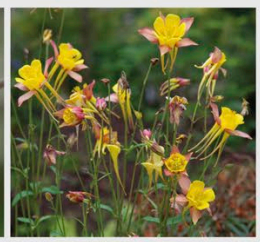


***A. vulgaris* var. *stellata* 'Nora Barlow'**

A. triternata



A. chrysantha



A. longissima

A. canadensis

BLUE

***Symphytum* x *uplandicum* 'Variegatum'**
Perennial with large, hairy, gray-green leaves that have broad, cream margins. In late spring and early summer, pink or blue buds open to tubular, blue or purplish-blue flowers. **H** 3ft (1m), **S** 2ft (60cm).

☼ ◑ Z3–9 ⓘ

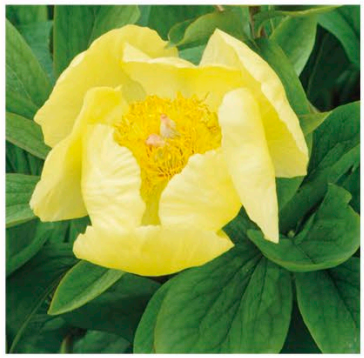
Symphytum caucasicum
Clump-forming perennial carrying clusters of pendent, azure-blue flowers in spring above rough, hairy, mid-green foliage. Best suited to a wild garden. **H** and **S** 2–3ft (60–90cm).

☼ ◑ Z3–9 ⓘ

YELLOW

***Iris* 'Butter and Sugar'**
Rhizomatous, beardless Siberian iris with large, yellow and white flowers produced from late spring to early summer. **H** 3ft (1m), **S** indefinite.

☼ ◑ Z3–9 ⓘ

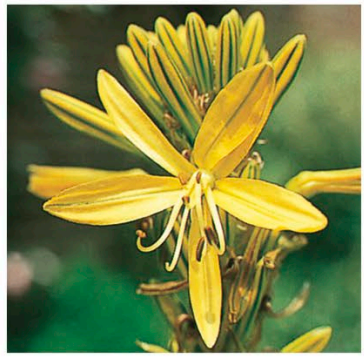


Paeonia mlokosewitschii
Clump-forming perennial with soft bluish-green leaves, sometimes edged reddish-purple. Produces large, single, lemon-yellow flowers in late spring and early summer. **H** and **S** 30in (75cm).

☼ ◑ Z5–8 ⓘ

***Chelidonium majus* 'Flore Pleno'**
Upright perennial with divided, bright green leaves and many cup-shaped, double, yellow flowers borne on branching sprays in late spring and early summer. Seeds freely and is best in a wild garden. **H** 24–30in (60–90cm), **S** 1ft (30cm).

☼ ◑ Z5–8 ⓘ



Asphodeline lutea (Yellow asphodel)
Neat, clump-forming perennial that bears dense spikes of star-shaped, yellow flowers amid narrow, gray-green leaves in late spring. **H** 3–4ft (1–1.2m), **S** 2–3ft (0.6m–1m).

☼ ◑ Z6–9

Euphorbia rigida
Mound-forming, evergreen perennial with semiupright stems with whorls of lance-shaped, blue-green leaves. Terminal umbels of bright yellow-green flowers are borne in spring. **H** 2ft (60cm), **S** 2ft (60cm) or more.

☼ ◑ Z7–11 ⓘ

***Doronicum* 'Miss Mason'**
Clump-forming, rhizomatous perennial with heart-shaped leaves. Slender stems bear daisylike, bright yellow flower heads, 3in (8cm) across, held well above the foliage, in mid- and late spring. **H** and **S** 2ft (60cm).

☼ ◑ Z4–8

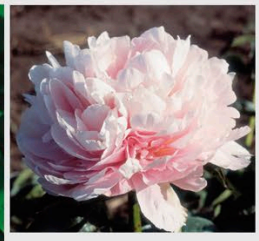
Aciphylla aurea (Golden Spaniard)
Evergreen, rosette-forming perennial with long, bayonetlike, yellow-green leaves. Bears spikes of golden flowers up to 6ft (2m) tall from late spring to early summer. **H** and **S** in leaf 24–30in (60–75cm).

☼ ◑ Z8–11

PEONIES

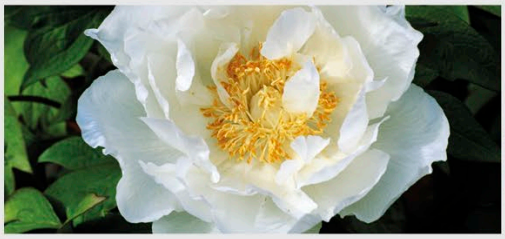
Peonies (*Paeonia* species and cultivars) are valued for their showy blooms, filling borders with whites, pinks, yellows, and reds in late spring and early- to mid-summer. Flowers include single, double, or anemone forms (with broad, outer petals and a mass of petaloids in the center); some are scented. They may need support when in full bloom and make good cut flowers. The foliage is striking, too, often tinged bronze when young and rich red in fall. As well as many attractive species and a wide range of herbaceous hybrids, there are several tree peonies (cultivars of *P.* x *suffruticosa*), and intersectional hybrids, which are crosses between the latter two. Peonies prefer sun, but will tolerate light shade, and need rich, well-drained soil. These long-lived plants resent transplanting and are best left undisturbed.

***P. lactiflora* 'Sarah Bernhardt'** ⓘ [double]

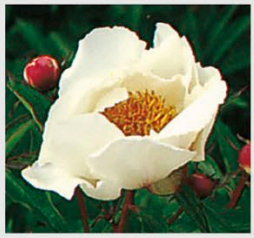


***P. lactiflora* 'Pillow Talk'** [double]

***P.* x *suffruticosa* 'Hana-kisoi'** ⓘ [tree peony]



***P.* x *suffruticosa* 'Hakuo-jisi'** [tree peony]



***P. lactiflora* 'White Wings'** ⓘ [single]

***P. lactiflora* 'Whitleyi Major'** ⓘ [single]

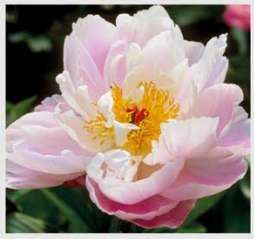
***P. lactiflora* 'Bowl of Beauty'** ⓘ [anemone]

P. cambessedesii ⓘ [single]

***P. lactiflora* 'Cheddar Gold'** [semidouble]

***P. lactiflora* 'Festiva Maxima'** [double]

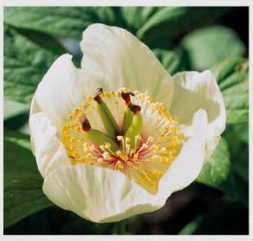
***P. lactiflora* 'Shirley Temple'** ⓘ [double]



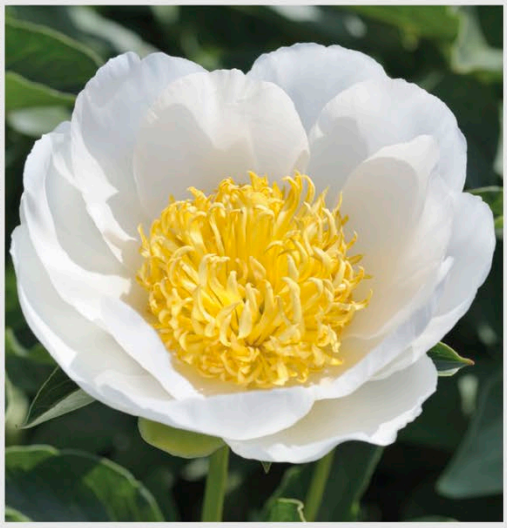
***P. lactiflora* 'Lady Alexandra Duff'** [semidouble]

***P.* x *suffruticosa* 'Yachiyo-tsubaki'** [tree peony]

P. obovata* var. *alba ⓘ [single]

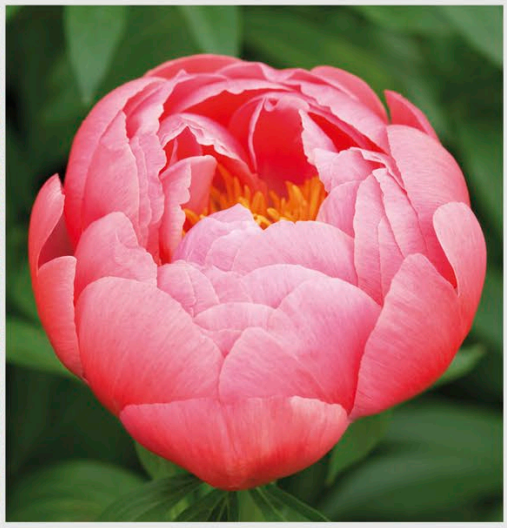


P. japonica [single]

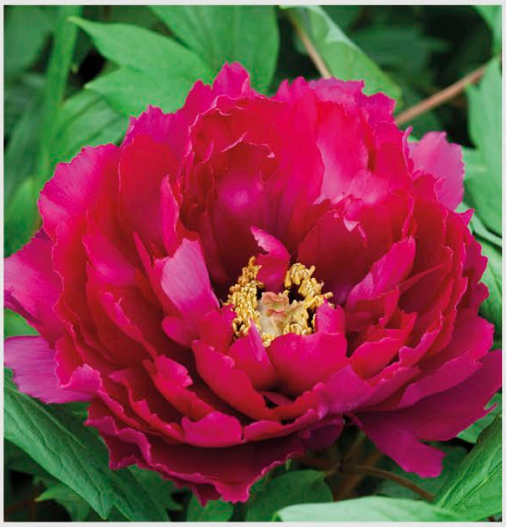


***P. lactiflora* 'Jan van Leeuwen'** [single]

P. emodi ⓘ [single]

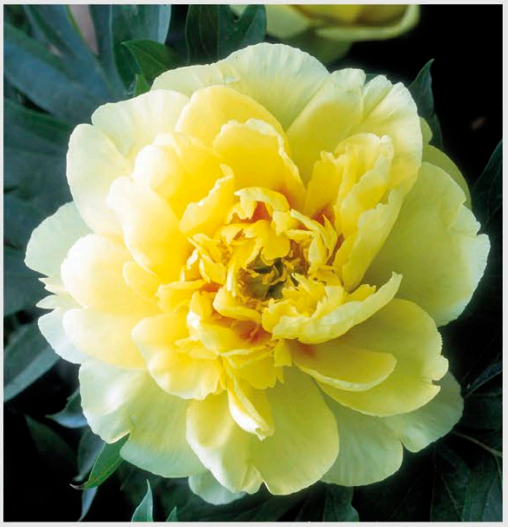


***P.* 'Coral Charm'** [semidouble]



***P.* x *suffruticosa* 'Rimpo'** [tree peony]

***P.* x *suffruticosa* 'Cardinal Vaughan'** ⓘ [semidouble]

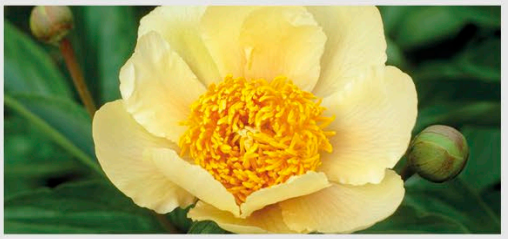


***P.* 'Bartzella'** [double]

***P. lactiflora* 'Paul M. Wild'** [double]

P. anomala subsp. veitchii ⓘ [single]

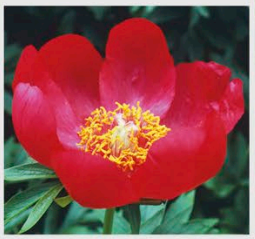
***P. lactiflora* 'Laura Dessert'** ⓘ [double]



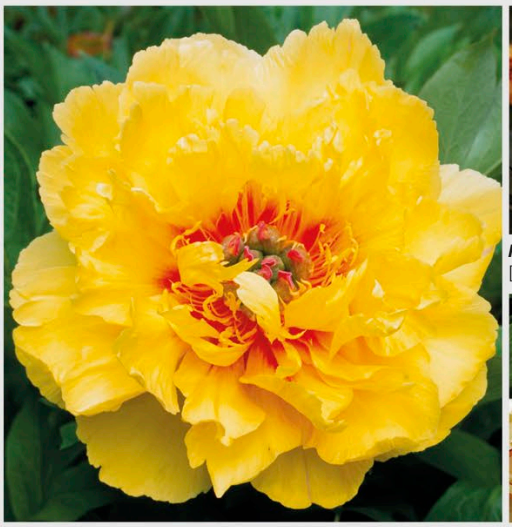
***P.* 'Claire de Lune'** [single]

***P. lactiflora* 'Félix Crousse'** [double]

***P.* x *festiva* 'Rubra Plena'** ⓘ [double]



***P. peregrina* 'Otto Froebel'** ⓘ [single]

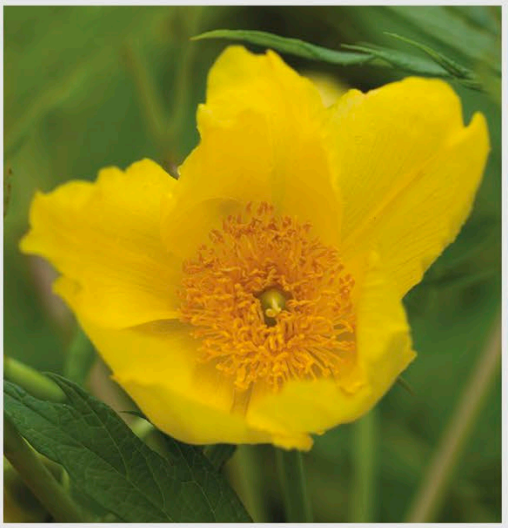


***P.* 'Garden Treasure'** [tree peony]

***P.* x *lemoinei* 'L'Espérance'** ⓘ [tree peony]

***P.* x *lemoinei* 'High Noon'** [tree peony]

***P.* 'Buckeye Belle'** [semidouble]



Paeonia delavayi* var. *delavayi f. lutea [single]

P. ludlowii ⓘ [single]

***Ranunculus aconitifolius* 'Flore Pleno'**
Clump-forming perennial with deeply divided, dark green leaves. Double, pure white flowers are borne on strong, branched stems in spring–summer.
H 24–30in (60–75cm), **S** 20in (50cm).

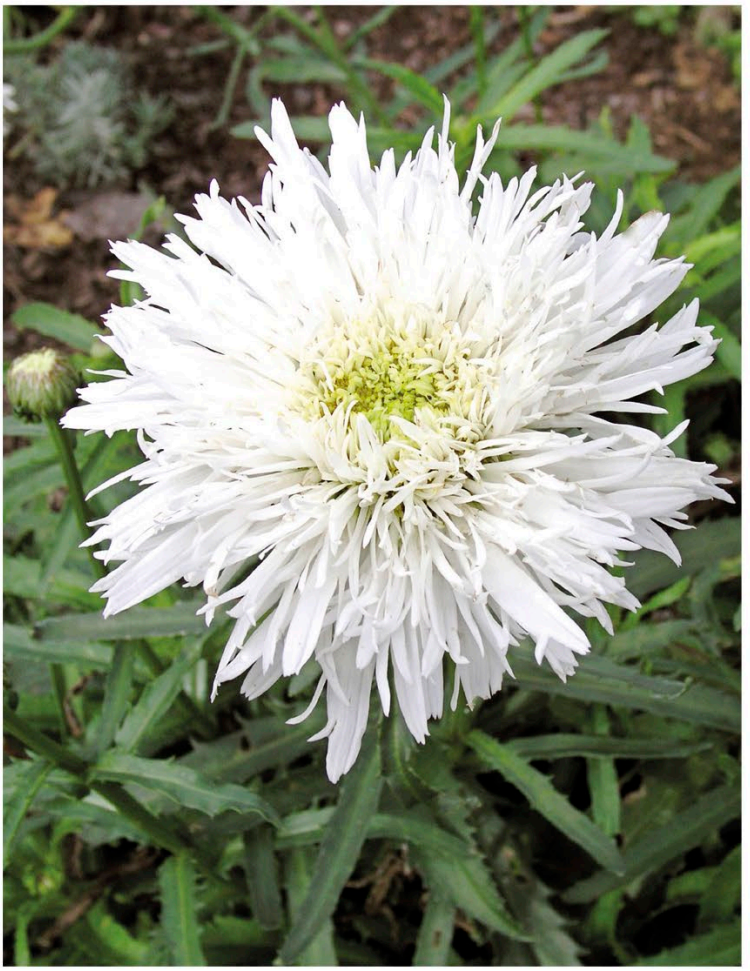
☼ ◑ Z5–9

Libertia grandiflora (New Zealand satin flower)
Loosely clump-forming, rhizomatous perennial. In early summer, produces spikes of white flowers above grasslike, dark green leaves that turn brown at the tips. Has decorative seed pods in fall.
H 30in (75cm), **S** 2ft (60cm).

☼ ◊ Z8–11

Dictamnus albus* var. *albus
(Burning bush)
Upright perennial bearing, in early summer, spikes of fragrant, star-shaped, white flowers with long stamens. Light green leaves are divided into ovate leaflets. Dislikes disturbance. **H** 3ft (1m), **S** 2ft (60cm).

☼ ◊ Z3–8 ⓘ



***Leucanthemum* x *superbum* 'Aglaia'**
Robust perennial with large, daisylike, semidouble, yellow-centered, pure white flower heads, on stout, upright stems, borne singly in early summer. Has spoon-shaped, toothed, glossy, dark green leaves. **H** 28in (70cm), **S** 20in (50cm).

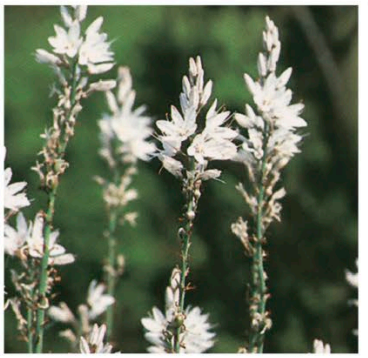
☼ ◊ Z5–8

Selinum wallichianum
Upright, architectural perennial with dainty, long-lasting, lacy umbels of star-shaped, white flowers, borne on leafy, branched stems, in mid- and late summer. Has very finely divided, fernlike, bright green leaves.
H 4ft (1.2m), **S** 16in (40cm).

☼ ◊ Z4–7

Hesperis matronalis* var. *albiflora
Upright perennial with long spikes of many 4-petaled, white flowers borne from late spring to midsummer. Flowers have a strong fragrance in the evening. Leaves are smooth and narrowly ovate.
H 30in (75cm), **S** 2ft (60cm).

☼ ◊ Z4–9



Asphodelus albus (White asphodel)
Upright perennial with clusters of star-shaped, white flowers borne in late spring and early summer. Has narrow, basal tufts of mid-green leaves.
H 3ft (1m), **S** 1½ft (45cm).

☼ ◊ Z7–11

***Phlox paniculata* 'Mount Fuji'**
Upright perennial with star-shaped, white flowers borne in conical heads in late summer. Has ovate, mid-green leaves. **H** 4ft (1.2m), **S** 2ft (60cm).

◐ ◊ Z4–8

Myrrhis odorata (Sweet Cicely)
Graceful perennial that resembles cow parsley. Has aromatic, fernlike, mid-green foliage and fragrant, bright creamy-white flowers in early summer.
H 2–3ft (60–90cm), **S** 2ft (60cm).

☼ ◊ Z3–7

***Aruncus dioicus* 'Kneiffii'**
Hummock-forming perennial that has deeply cut, feathery leaves with lance-shaped leaflets on elegant stems and bears branching plumes of tiny, star-shaped, creamy-white flowers in midsummer. **H** 3ft (90cm), **S** 20in (50cm).

☼ ◊ Z3–7

Nicotiana alata
Rosette-forming perennial, often grown as an annual. In late summer, bears clusters of tubular, creamy-white flowers, pale brownish-violet externally, which are fragrant at night. Has ovate, mid-green leaves. **H** 30in (75cm), **S** 1ft (30cm).

☼ ◊ Z10–11 ⓘ

***Leucanthemum* x *superbum* 'Sonnenschein'**
Erect perennial with large, daisylike, single, creamy-yellow flower heads, each with a darker yellow center, borne from mid- to late summer. Has spoon-shaped, toothed, dark green leaves. May need staking. **H** 3ft (90cm), **S** 20in (50cm).

☼ ◊ Z5–8

Morina longifolia
Evergreen perennial that produces rosettes of large, spiny, thistlelike, rich green leaves. Whorls of hooded, tubular, white flowers, flushed pink within, are borne well above foliage in midsummer. **H** 2–2½ft (60–75cm), **S** 1ft (30cm).

☼ ◊ Z6–9

Ageratina altissima (Hardy age, Mist flower, White snakeroot)
Erect perennial with nettlelike, gray-green leaves. In late summer, bears dense, flat, white flower heads. **H** 4ft (1.2m), **S** 1½ft (45cm).

◑ ◊ Z4–8

***Anaphalis triplinervis* 'Sommerschnee'**
Variable, clump-forming perennial with obovate to elliptic, white-woolly leaves, prominently 3-veined. In mid- to late summer, produces clusters of yellow-centered flower heads with bright silvery-white bracts. **H** 20in (50cm), **S** 18–24in (45–60cm).

☼ ◊ Z3–8

Gillenia trifoliata
Upright perennial with many wiry, branching stems carrying clusters of dainty, white flowers with reddish-brown calyces in summer. Leaves are dark green and lance-shaped. Needs staking. Thrives in most situations. **H** 3–4ft (1–1.2m), **S** 2ft (60cm).

☼ ◊ Z5–9

***Gypsophila paniculata* 'Bristol Fairy'**
Perennial with small, dark green leaves and wiry, branching stems bearing panicles of tiny, double, white flowers in summer. **H** 2–2½ft (60–75cm), **S** 3ft (1m).

☼ ◊ Z5–9

Anaphalis margaritacea
(Pearl everlasting)
Bushy perennial that has lance-shaped, gray-green or silvery-gray leaves with white margins and many heads of small, white flowers on erect stems in late summer. Flower heads dry well. **H** 2–2½ft (60–75cm), **S** 2ft (60cm).

☼ ◊ Z4–8

Valeriana officinalis (Cat's valerian, Common valerian)
Clump-forming, fleshy perennial that bears spikes of white to deep pink flowers in summer. Leaves are deeply toothed and mid-green. Has the disadvantage of attracting cats. **H** 3–4ft (1–1.2m), **S** 3ft (1m).

☼ ◊ Z4–9

Gaura lindheimeri
Bushy perennial with racemes of star-shaped, 4-petaled, butterflylike, pink-tinged or white flowers, borne on wandlike stems, in summer. Leaves are lance-shaped and mid-green. Grows well with grasses and other dainty perennials. **H** 3ft (90cm), **S** 2ft (60cm).

☼ ◊ Z6–9

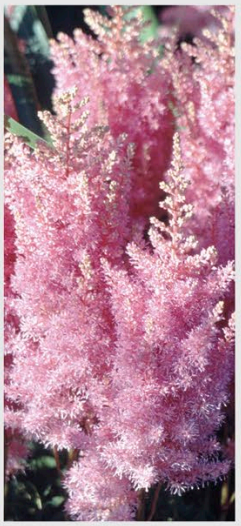
ASTILBES

These elegant, colorful, tough perennials are useful plants for moist sites. Their feathery plumes open mainly in summer and are composed of hundreds, sometimes thousands, of tiny flowers that create diverse forms, from dense and upright to open and arching. Colors range from white through shades of pink, to deep reds and purples. The blooms are set against neatly lobed or divided foliage, which, in some cultivars, has attractive metallic, bronze or red tints. All prefer moist soil—they tolerate clay well—in sun or partial shade, and they make compact clumps in bog or waterside gardens. Watch out for signs of plant collapse, as astilbe are susceptible to vine weevil attack.

***A.* 'Deutschland'**

***A.* 'Sprite'**

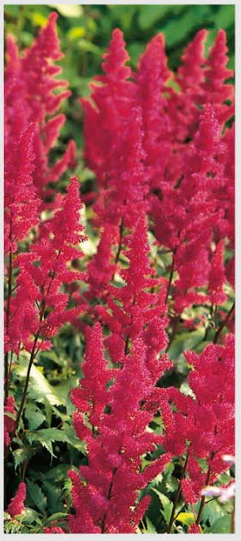
***A.* 'Straussenfeder'**



***A.* x *crispa* 'Perkeo'**

***A.* 'Europa'**

***A.* 'Feuer'**



***A.* 'Montgomery'**

***A.* 'Irrlicht'**

***A.* 'Granat'**

***A.* 'Amethyst'**

MEDIUM

SUMMER

PINK

***Linaria purpurea* 'Canon J. Went'**
Upright perennial bearing spikes of snapdragonlike, pink blooms with orange-tinged throats from mid- to late summer. Has narrow, gray-green leaves. **H** 2–3ft (60cm–1m), **S** 2ft (60cm).

☼ 💧Z3–8

***Tanacetum coccineum* 'Eileen May Robinson'**
Upright perennial with slightly aromatic, feathery leaves. Daisylike, pink flowers with yellow centers are produced on strong stems in summer. **H** 30in (75cm), **S** 18in (45cm).

☼ 💧Z5–9 ⓘ

Malva moschata (Musk mallow)
Bushy, branching perennial producing successive spikes of saucer-shaped, rose-pink flowers during early summer. Narrow, lobed, divided leaves are slightly scented. **H** 2–3ft (60cm–1m), **S** 2ft (60cm).

☼ 💧Z3–8

***Lupinus* Band of Nobles Series 'The Chatelaine'**
Clump-forming perennial carrying spikes of pink-and-white flowers above divided, mid-green foliage in early summer. **H** 4ft (1.2m), **S** 1½ft (45cm).

☼ 💧Z5–8 ⓘ

Centaurea pulcherrima
Upright perennial with deeply cut, silvery leaves. Rose-pink flower heads, with thistlelike centers, paler than surrounding star-shaped ray petals, are borne singly on slender stems in summer. **H** 2½ft (75cm), **S** 2ft (60cm).

☼ 💧Z4–8

Mirabilis jalapa (Four o'clock flower, Marvel of Peru)
Bushy, tuberous perennial. Fragrant, trumpet-shaped, crimson, pink, white or yellow flowers, opening in evening, cover mid-green foliage in summer. **H** 2–4ft (0.6m–1.2m), **S** 2–2½ft (60–75cm).

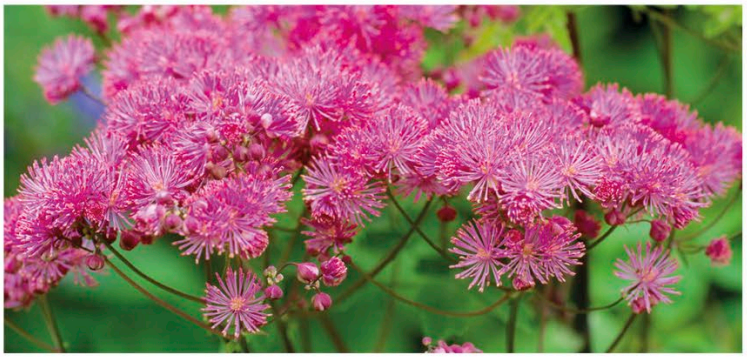
☼ ◊ Z10–11 ⓘ

***Physostegia virginiana* var. *speciosa* 'Variegata'**
Erect perennial. In late summer, produces spikes of tubular, purplish-pink blooms that can be placed into position. Toothed, mid-green leaves are white-variegated. **H** 3–4ft (1–1.2m), **S** 2ft (60cm).

☼ ◐ Z2–8

***Penstemon* 'Evelyn'**
Semievergreen, bushy perennial with racemes of small, tubular, pink flowers produced from midsummer to mid-fall. Broadly lance-shaped leaves are mid-green. **H** and **S** 18in (45cm).

☼ ◊ Z7–10



***Thalictrum aquilegiifolium* 'Thundercloud'**
Clump-forming perennial with a mass of fernlike, silvery-green leaves. Bunched heads of fluffy, dark lilac flowers, on sturdy stems, are borne in summer. **H** 3ft (1m), **S** 1ft (30cm).

☼ ◊ Z5–9

***Monarda* 'Croftway Pink'**
Clump-forming perennial carrying whorls of hooded, soft pink blooms throughout summer above neat mounds of aromatic foliage. **H** 3ft (1m), **S** 1½ft (45cm).

☼ ◐ Z4–9

Geranium psilostemon
Clump-forming perennial that has broad, deeply cut leaves with good fall color and many cup-shaped, single, black-centered, magenta flowers in midsummer. **H** and **S** 4ft (1.2m).

☼ ◊ Z5–6

***Sidalcea* 'Oberon'**
Upright perennial with rounded, deeply cut leaves divided into narrowly oblong segments. In summer, produces racemes of shallowly cup-shaped, clear pink flowers. **H** 2ft (60cm), **S** 18in (45cm).

☼ ◊ Z5–7

***Astilbe* 'Venus'**
Leafy perennial bearing feathery, tapering plumes of tiny, pale pink flowers in summer. Foliage is broad and divided into leaflets; flowers remain on the plant, dried and brown, well into winter. Prefers humus-rich soil. **H** and **S** to 3ft (1m).

☼ ◑ Z3–8

***Lythrum salicaria* 'Feuerkerze'**
Clump-forming perennial for a waterside or bog garden. Bears spikes of intense rose-red blooms from mid- to late summer. Small, lance-shaped leaves are borne on flower stems. **H** 3ft (1m), **S** 1½ft (45cm).

☼ ◑ Z4–9

***Echinacea purpurea* 'Robert Bloom'**
Upright perennial. Has lance-shaped, dark green leaves and large, daisylike, deep crimson-pink flower heads, with conical, brown centers, borne singly on strong stems in summer. Needs humus-rich soil. **H** 4ft (1.2m), **S** 20in (50cm).

☼ ◑ Z3–9

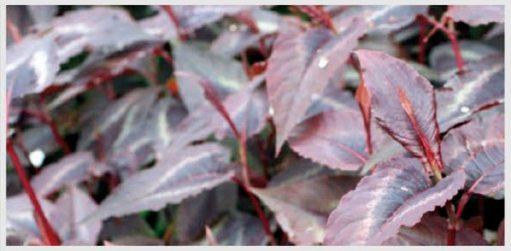
Rehmannia elata
Straggling perennial bearing foxglovelike, yellow-throated, rose-purple flowers in leaf axils of notched, stem-clasping, soft leaves from early to midsummer. **H** 3ft (1m), **S** 1½ft (45cm). Min. 34ºF (1ºC).

☼ ◑ Z7–10

PERSICARIA

The popularity of *Persicaria* have increased in recent years, as gardeners realize the value of these plants in a range of different situations. Most flower profusely for many weeks during summer, while those with handsome foliage are prized for the beauty of their leaves rather than their blooms. Taller selections are usually self-supporting, while lower growing types will form useful, weed-suppressing ground cover. Grow *Persicaria* in moist soil in sun or partial shade; *P. bistorta* tolerates drier soil. A word of warning: some, such as *P. microcephala* 'Red Dragon', can be invasive and will need to be controlled.

***P. campanulata* 'Rosenrot'**



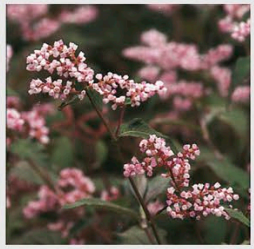
***P. microcephala* 'Red Dragon'**

***P. affinis* 'Superba'**

***P. virginiana* var. *filiformis* 'Lance Corporal'**

P. alpina

***P. bistorta* 'Superba'** ⓘ



P. campanulata ⓘ

***P. amplexicaulis* 'Firetail'** ⓘ

***P. virginiana* 'Painter's Palette'** ⓘ

Knautia macedonica
Upright perennial with deeply divided leaves and many rather lax, branching stems bearing double, almost globular, bright crimson flower heads in summer. Needs staking. **H** 30in (75cm), **S** 2ft (60cm).

☼ ◊ Z5–9

Hedysarum coronarium
(French honeysuckle)
Spreading, shrubby perennial or biennial. Spikes of pealike, bright red flowers are produced in summer above divided, mid-green leaves. **H** and **S** 3ft (1m).

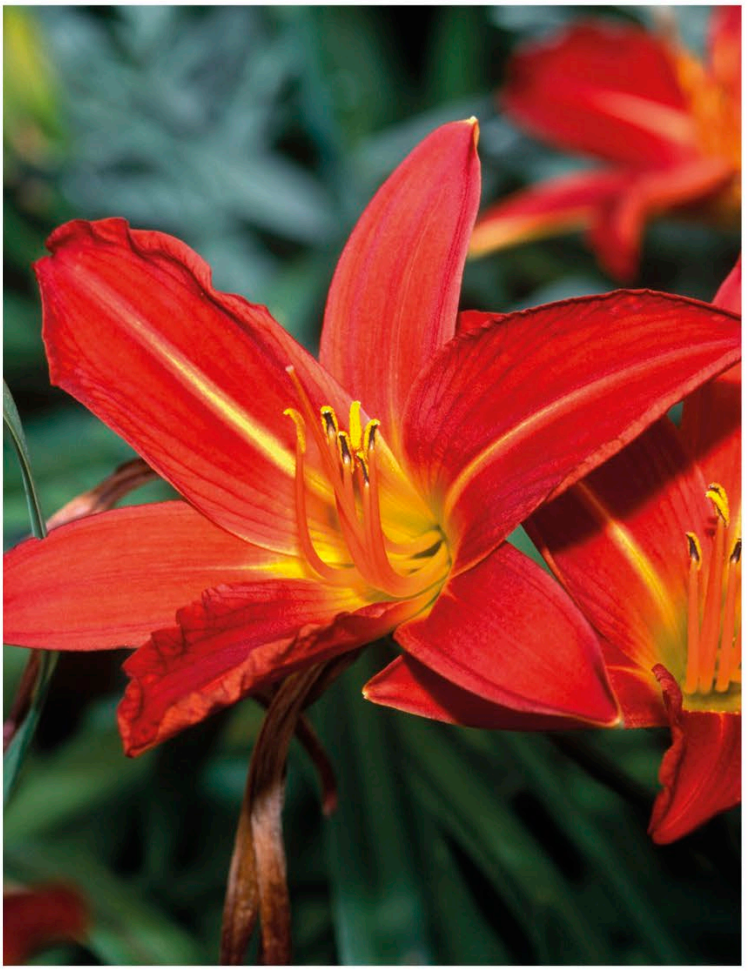
☼ ◊ Z4–9

***Achillea* 'Fanal'**
Herbaceous perennial, with slightly grayish-green, fernlike leaves, forming spreading, drought-resistant clumps. In early summer, produces flat-topped, bold crimson flower heads that atttract bees and butterflies. **H** 30in (75cm), **S** 2ft (60cm).

☼ ◊ Z3–9

***Phlox paniculata* 'Prince of Orange'**
Upright perennial with tubular, 5-lobed, orange-red flowers borne in conical heads in late summer. Has ovate, mid-green leaves. **H** 4ft (1.2m), **S** 2ft (60cm).

◑ ◊ Z4–8



***Hemerocallis* 'Red Precious'**
Evergreen, clump-forming perennial bearing small, intensely red flowers, with a slim, greenish-yellow stripe on each petal and a golden throat, in late summer. **H** and **S** 20in (50cm).

☼ ◗ Z3–10

Lychnis chalcedonica
(Jerusalem cross, Maltese cross)
Neat, clump-forming perennial that bears flat heads of small, vermilion flowers at the tips of stout stems in early summer. Ovate leaves are mid-green. **H** 3–4ft (1–1.2m), **S** 1–1½ft (30–45cm).

☼ ◊ Z3–8

***Monarda* 'Cambridge Scarlet'**
Clump-forming perennial that bears whorls of hooded, rich red flowers above neat mounds of aromatic, hairy foliage throughout summer to early fall. **H** 3ft (1m), **S** 1½ft (45cm).

☼ ◗ Z3–9

***Papaver* Oriental Group 'Beauty of Livermere'**
Hairy-leaved perennial with deep, fleshy roots. Large, solitary, cup-shaped, crimson-scarlet flowers, with a black mark at the base of each petal, are borne from late spring to midsummer. **H** 3–4ft (1–1.2m), **S** 3ft (1m).

☼ ◊ Z3–9

PENSTEMONS

Valued for their racemes of foxglovelike flowers, Penstemons are elegant and reliable border perennials. Numerous cultivars are available, in colors that include white, pale and dark pink, warm cherry-red, clear blue, and shades of purple. Many flowers have contrasting white throats or are streaked with other colors. Penstemons flower prolifically in summer and the display can be prolonged, provided the plants are regularly deadheaded. Some taller cultivars may need staking. All types thrive in well-drained soil, preferably in full sun. Some are not fully hardy, and where winters are severe, plants should be overwintered in a cold frame. Plants are more likely to survive frost if grown in a sheltered spot and mulched in fall. Penstemons are simple to propagate and can easily be raised as cuttings.

P. STROMBOLI **('Yaboli')**

P. **'Hidcote Pink'**

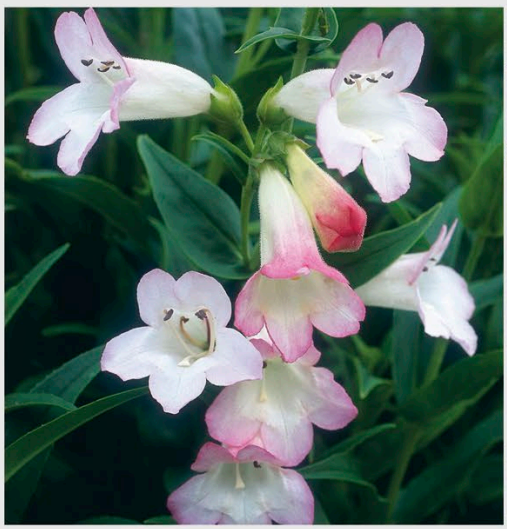
P. **'Stapleford Gem'**

P. fruticosus **var.** *scouleri* **'Albus'**

P. **'White Bedder'**

P. **'Apple Blossom'**

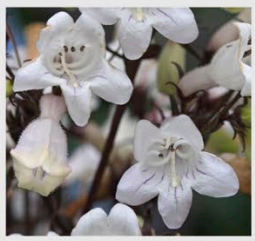
P. **'Alice Hindley'**



P. **'Beech Park'**

P. **'Mother of Pearl'**

P. **'The Juggler'**



P. digitalis **'Husker Red'**

P. **'Margery Fish'**

P. **'Flamingo'**

P. **'Osprey'**

P. kunthii

P. 'Schoenholzeri'

P. 'Rubicundus'

P. glaber

P. 'Russian River'

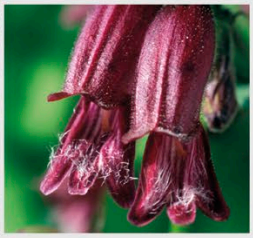
P. 'Raven'

P. 'Andenken an Friedrich Hahn'

P. 'Sour Grapes'

P. 'King George V'

P. 'Papal Purple'



P. whippleanus

P. 'Burgundy'

P. 'Pensham Just Jayne'

P. 'Port Wine'

P. 'Hopleys Variegated'

P. 'Chester Scarlet'

P. barbatus

P. 'Cherry'

P. heterophyllus 'Heavenly Blue'

RED

***Astrantia major* 'Ruby Wedding'**
Clump-forming perennial producing ruby-red flower heads on tall, slender stems throughout summer above a mass of divided, purple-flushed, mid-green leaves. **H** and **S** 2ft (60cm).

☼ 💧Z4–7

Cosmos atrosanguineus
(Chocolate cosmos)
Upright, tuberous perennial with chocolate-scented, maroon-crimson flower heads in late summer. In warm areas, tubers may overwinter if protected. **H** 2ft (60cm) or more, **S** 1½ft (45cm).

☼ 💧Z7–11

Filipendula purpurea
Upright perennial with deeply divided leaves. Produces large, terminal heads of many tiny, rich reddish-purple flowers in summer. Makes a good waterside plant. **H** 4ft (1.2m), **S** 2ft (60cm).

◐ 💧Z4–9

PURPLE

Geranium palmatum
Evergreen perennial with large, palmate, bright, rather glossy, light green leaves held on sturdy stalks, growing from a central, rather woody stem. In early summer, bears tall, branched stems of 5-petaled, magenta flowers. **H** 3ft (1m), **S** 2ft (60cm).

◐ 💧Z7–9

ORIENTAL POPPIES

The large-flowered selections of *Papaver orientale* are stars of the early summer garden, their huge yet delicate blooms, some with fringed petals, borne in profusion above mounds of hairy foliage. Numerous selections are available, with flowers in pastel shades of white, pink, and plum-purple, or red and orange for dramatic hot-hued borders. Large round seed heads keep the display going for a few more weeks after the flowers have faded. Poppies thrive in fertile soil in full sun, but plants die down in midsummer; ensure that other later performers fill the gaps.

***P.* Oriental Group 'Karine'**

***P.* 'Medallion'**

***P.* Oriental Group 'Mrs. Perry'**

***P.* Oriental Group 'Turkish Delight'**

***P.* Oriental Group 'Orange Glow'**

P. orientale* var. *bracteatum

***P.* Oriental Group 'Patty's Plum'**

Acanthus spinosus
Stately perennial that has very large, arching, deeply cut and spiny-pointed, glossy, dark green leaves. Spires of funnel-shaped, soft mauve and white flowers are borne freely in summer. **H** 4ft (1.2m), **S** 2ft (60cm) or more.

☼ 💧 Z5–9

Linaria triornithophora
(Three birds toadflax)
Upright perennial that from early to late summer produces spikes of snapdragon-like, purple and yellow flowers above narrow, gray-green leaves. **H** 3ft (1m), **S** 2ft (60cm).

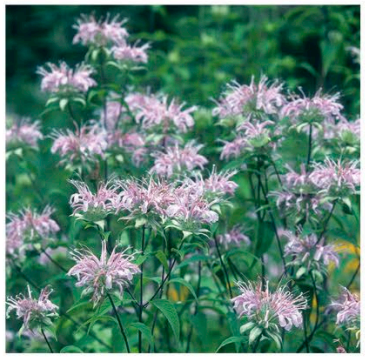
☼ 💧 Z7–9

Dianella tasmanica
Upright perennial with nodding, star-shaped, bright blue or purple-blue flowers borne in branching sprays in summer, followed by deep blue berries in fall. Has untidy, evergreen, strap-shaped leaves. **H** 4ft (1.2m), **S** 20in (50cm).

☼ 💧 pH Z8–10

***Geranium pratense* 'Mrs. Kendall Clark'**
Clump-forming perennial with hairy stems and deeply divided leaves. In early to mid-summer, bears erect, saucer-shaped, pearl-gray or violet-blue flowers with white or pale pink veins. **H** 2–3ft (60–90cm), **S** 2ft (60cm).

☼ 💧 Z4–8

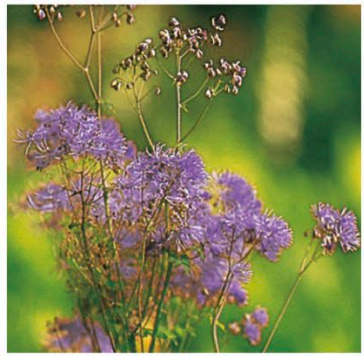


Monarda fistulosa
Bushy, clump-forming perennial with branching stems. Has ovate to lance-shaped, softly hairy, dark green leaves and produces small heads of lilac-purple flowers from mid- to late summer. **H** 4ft (1.2m), **S** 1½ft (45cm).

☼ 💧 Z3–9

***Geranium sylvaticum* 'Mayflower'**
Upright perennial with a basal clump of deeply lobed leaves, above which rise branching stems of cup-shaped, violet-blue flowers in early summer. **H** 3ft (1m), **S** 2ft (60cm).

◐ 💧 Z8



Thalictrum aquilegiifolium
Clump-forming perennial with a mass of finely divided, gray-green leaves, resembling those of maidenhair fern. Bunched heads of fluffy, lilac-purple flowers are borne on strong stems in summer. **H** 3–4ft (1–1.2m), **S** 1½ft (45cm).

☼ 💧 Z5–9

***Aconitum* x *cammarum* 'Bicolor'**
Compact, tuberous perennial with violet-blue and white flowers borne in summer along upright stems. Has deeply cut, divided, glossy, dark green leaves and poisonous roots. **H** 4ft (1.2m), **S** 20in (50cm).

☼ 💧 Z3–7 ⓘ

***Veronica spicata* 'Romiley Purple'**
Clump-forming perennial that in summer freely produces large spikes of purple flowers above whorled, mid-green leaves. **H** 3–4ft (1–1.2m), **S** 1–2ft (30–60cm).

☼ 💧 Z3–8

Galega orientalis
Vigorous, upright but compact perennial that in summer bears spikes of pealike, blue-tinged, violet flowers above delicate leaves divided into ovate leaflets. Needs staking. Spreads freely. **H** 4ft (1.2m), **S** 2ft (60cm).

☼ 💧 Z5–8

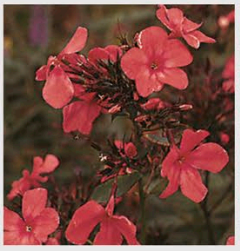
PHLOX

Border phlox (cultivars of *P. maculata* and *P. paniculata*) are an elegant mainstay of the mid- to late summer border. Their dome-shaped or conical panicles of flowers, often delicately scented, are produced in white, pink, red, and purple, many with contrasting eyes. Some cultivars also have strikingly variegated foliage. Phlox thrive in sun or partial shade in fertile, well-drained soil; taller types may need staking. For larger flowers, reduce the number of stems in spring by pinching out the weakest shoots. To prolong flowering, deadhead regularly to encourage side shoots to bloom.

P. paniculata **'Graf Zeppelin'**

P. paniculata **'Eva Cullum'**

P. paniculata **'Mia Ruys'**



P. paniculata **'Brigadier'**

P. paniculata **'Windsor'**

P. paniculata **'Norah Leigh'**

P. paniculata **'Amethyst'**

P. paniculata **'Hampton Court'**

MEDIUM

SUMMER

PURPLE

Baptisia australis (False indigo)
Upright perennial bearing many-flowered racemes of pealike, violet-blue flowers in summer. Bright green leaves are divided into ovate leaflets. Dark gray seed pods may be used for winter decoration. **H** 30in (75cm), **S** 2ft (60cm).

☼ 💧Z3–9

Erigeron **'Dunkelste Aller'**
Clump-forming perennial with a mass of daisylike, deep purple flower heads, with yellow centers, in summer. Has narrowly ovate, grayish-green leaves. **H** 32in (80cm), **S** 2ft (60cm) or more.

☼ 💧Z5–8

BLUE

Eryngium alpinum
Upright perennial with basal rosettes of heart-shaped, deeply toothed, glossy foliage. In summer, stout stems bear heads of conical, purplish-blue flower heads, surrounded by blue bracts and soft spines. **H** 2½–3ft (75cm–1m), **S** 2ft (60cm).

☼ 💧Z6–9

Agapanthus inapertus **subsp. *pendulus* 'Graskop'**
Clump-forming perennial with compact, rounded clusters of pendent, dark violet-blue flowers, in summer. Has narrowly strap-shaped, rich green leaves. **H** 3ft (90cm), **S** 20in (50cm).

☼ 💧Z9

Nepeta **'Six Hills Giant'**
Vigorous, clump-forming perennial with narrowly ovate, toothed, hairy, aromatic, gray-green leaves. In summer, bears loose spikes of tubular, 2-lipped, lavender-blue flowers. **H** 3ft (90cm), **S** 4ft (1.2m).

☼ 💧Z3–8

CAMPANULA

Archetypal cottage garden plants, tall campanulas are valued for their spires of bell-shaped, pastel flowers, which appear from early- to midsummer. They make good candidates for herbaceous borders, naturalistic planting schemes—perhaps at the edge of a woodland garden—or with shrubs such as roses. Developments using *C. punctata* have produced some superb, compact plants with dramatic, drooping flowers suitable for the front of a border. *C. lactiflora* and tall types may need some support. Most are easily grown in sun or light shade in reasonably fertile, moist but well-drained soil.

***Anchusa azurea* 'Loddon Royalist'**
Upright perennial that bears flat, single, deep blue flowers on branching spikes in early summer. Most of the lance-shaped, coarse, hairy leaves are at the base of plant. Needs staking. **H** 4ft (1.2m), **S** 2ft (60cm).

☼ ◊ Z3–8

***Echinops bannaticus* 'Taplow Blue'**
Upright perennial with narrowly ovate, divided, prickly, grayish-green leaves. Erect stems produce thistlelike, rounded heads of steely-blue flowers from mid- to late summer. Suitable even for poor soils. Attractive to insects. **H** 4ft (1.2m), **S** 3ft (90cm).

☼ ◊ Z5–9

Eryngium* x *oliverianum
Upright perennial that produces large, rounded heads of thistlelike, blue to lavender-blue flowers in late summer. Has heart-shaped, jagged-edged, basal, mid-green leaves. **H** 2–3ft (60cm–1m), **S** 1½–2ft (45–60cm).

☼ ◊ Z5–8

***Agapanthus* 'Northern Star'**
Clump-forming perennial bearing large, rounded clusters of inky-blue flowers, with reflexed petals, in summer, followed by long-lasting seed heads. Has narrowly strap-shaped, mid-green leaves stained purple at the bases. **H** 4ft (1.2m), **S** 2ft (60cm) or more.

☼ ◊ Z8–11

***Agapanthus* 'Purple Cloud'**
Compact, clump-forming perennial with large, rounded clusters of violet-blue flowers in summer followed by long-lasting seedheads. Has broadly strap-shaped, slightly silver-gray leaves. **H** 4ft (1.2m), **S** 2ft (60cm) or more.

☼ ◊ Z9–11

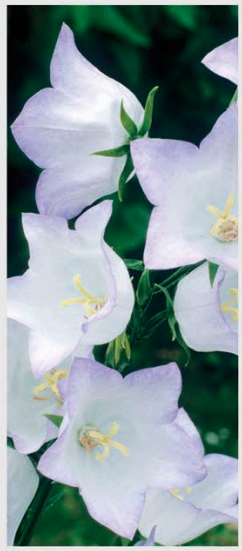
***Aconitum* 'Stainless Steel'**
Erect, tuberous perennial with dense spikes of hooded, silvery-blue flowers in mid- to late summer, held above deeply divided, dark green leaves. **H** 3ft (1m), **S** 2ft (60cm).

☼ ◑ Z4–8 ⓘ

C. alliariifolia

***C. punctata* f. *rubriflora* 'Cherry Bells'**

***C. trachelium* 'Bernice'**



***C. persicifolia* 'Chettle Charm'**

***C. lactiflora* 'Loddon Anna'**

***C. glomerata* 'Superba'**

C. takesimana

***C. lactiflora* 'Prichard's Variety'**

BLUE

Agapanthus praecox* subsp. *orientalis
Perennial with large, dense umbels of sky-blue flowers borne on strong stems in late summer over clumps of broad, almost evergreen, dark green leaves. Makes a good plant for containers.
H 3ft (1m), **S** 2ft (60cm).

☼ 💧Z8–11

Cichorium intybus (Chicory)
Clump-forming perennial with basal rosettes of light green leaves and daisylike, bright blue flower heads borne along upper parts of willowy stems in summer. Flowers are at their best before noon. **H** 4ft (1.2m), **S** 1½ft (45cm).

☼ 💧Z4–8 ⓘ

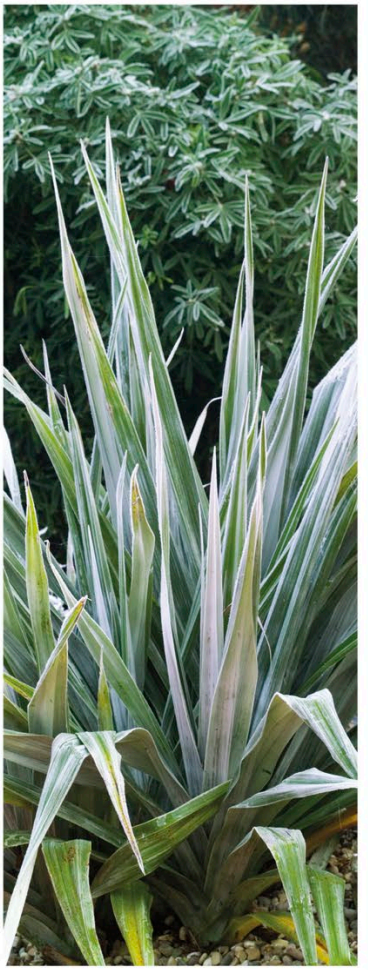
***Campanula persicifolia* 'Telham Beauty'**
Perennial with basal rosettes of narrow, bright green leaves. In summer, large, nodding, cup-shaped, light blue flowers are borne on slender spikes. **H** 3ft (1m), **S** 1ft (30cm).

☼ 💧Z3–8

SILVER

***Artemisia* 'Powis Castle'**
Semievergreen, upright subshrub with woody stems, usually grown as a perennial, with fernlike, silvery-gray leaves, making an excellent foil for other plants. If old growth is retained, insignificant, yellow flowers are borne in summer. **H** and **S** 3ft (1m).

☼ 💧Z7–9



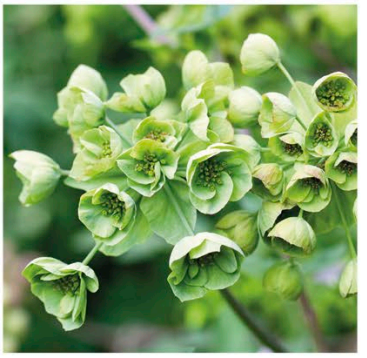
Astelia chathamica
Evergreen, clump-forming perennial with sword-shaped, erect, bright silvery-gray leaves. Panicles of insignificant, frothy, yellow flowers are borne in summer. **H** and **S** 4ft (1.2m).

☼ 💧Z8–9

GREEN

Aciphylla squarrosa (Bayonet plant)
Evergreen, clump-forming perennial with tufts of pointed, divided leaves. In summer bears spiky, yellow flowers in compound umbels with male and female flowers often mixed. **H** and **S** 3–4ft (1–1.2m).

☼ 💧Z9–15



***Mathiasella bupleuroides* 'Green Dream'**
Upright, deciduous perennial with divided, silvery-blue leaves. In early summer has umbels of bell-shaped, pendent, jade-green flowers, which turn pinkish as they age. Needs good winter drainage. **H** 3ft (1m), **S** 2ft (60cm).

☼ 💧Z8–11

Euphorbia sikkimensis
Spreading, upright perennial bearing yellow cyathia cupped by pale to greenish-yellow involucres in mid- to late summer. Young shoots are bright pink and the leaves deep green.
H 4ft (1.2m), **S** 1½ft (45cm).

◑ 💧Z6–9 ⓘ

***Verbascum* 'Gainsborough'**
Semievergreen, rosette-forming, short-lived perennial bearing branched racemes of 5-lobed, pale sulphur-yellow flowers throughout summer above ovate, mid-green leaves borne on flower stems. **H** 2–4ft (60cm–1.2m), **S** 1–2ft (30–60cm).

☼ ◊ Z5–9

Inula hookeri
Clump-forming perennial with lance-shaped to elliptic, hairy leaves and a mass of slightly scented, daisylike, greenish-yellow flower heads borne in summer. **H** 30in (75cm), **S** 18in (45cm).

◐ ◊ Z4–8

Aconitum lycoctonum* subsp. *vulparia (Wolfsbane)
Upright, fibrous perennial that has hooded, straw-yellow flowers during summer. Leaves are dark green and deeply divided. Requires staking.
H 3–4ft (1–1.2m), **S** 1–2ft (30–60cm).

◐ ◊ Z5–8 !

Thermopsis rhombifolia
Upright perennial bearing spikes of bright yellow flowers above divided, mid-green leaves in summer.
H 2–3ft (60cm–1m), **S** 2ft (60cm).

☼ ◊ Z3–8

Gentiana lutea (Great yellow gentian)
Erect, unbranched perennial with ovate, stalkless leaves to 1ft (30cm) long. In summer, bears dense whorls of tubular, yellow flowers in axils of greenish bracts. **H** 3–4ft (1–1.2m), **S** 2ft (60cm).

☼ ◊ Z7–8

Phlomis russeliana
Evergreen perennial, forming excellent groundcover, with large, rough, heart-shaped leaves. Stout flower stems bear whorls of hooded, butter-yellow flowers in summer.
H 3ft (1m), **S** 2ft (60cm) or more.

☼ ◊ Z3–9

Lysimachia punctata
(Garden loosestrife)
Clump-forming perennial that in summer produces spikes of bright yellow flowers above mid-green leaves.
H 2–2½ft (60–75cm), **S** 2ft (60cm).

☼ ◖ Z4–8

***Anthemis tinctoria* 'E.C. Buxton'**
Clump-forming perennial with a mass of daisylike, lemon-yellow flower heads borne singly in summer on slim stems. Cut back hard after flowering to promote a good rosette of crinkled leaves for winter. **H** and **S** 3ft (1m).

☼ ◊ Z3–8

Berkheya macrocephala
Rosette-forming perennial bearing large, daisylike, yellow flower heads on erect, branched, spiny-leaved stems throughout summer. Prefers rich soil and a warm, sheltered position.
H and **S** 3ft (1m).

☼ ◊ Z8–11

***Achillea filipendulina* 'Gold Plate'**
Upright perennial with stout, leafy stems carrying broad, flat, terminal heads of yellow flowers in summer, above filigree foliage. Flowers retain color if dried. Divide plants regularly.
H 4ft (1.2m), **S** 2ft (60cm).

☼ ◊ Z3–9 !

DAYLILIES

Although they belong to the lily family (*Liliaceae*), daylilies (*Hemerocallis*) are not true lilies; their common name comes from their lilylike flowers that last just one day, but appear in succession for many weeks in summer. Daylilies range in size from compact plants that grow 12–15in (30–38cm) tall, to large plants that may reach 5ft (1.5m). They form clumps of arching, strappy foliage, and flower colors range from creamy-white, yellow, orange, red, pink, and purple to almost black; some also have bands of contrasting colors on the petals. The flower forms are classified as single, double, or spider and some are fragrant. They thrive in most soils, except waterlogged, in sun or shade, but flower best when in the sun for at least part of the day.

H. 'Pardon Me'

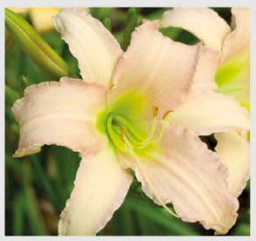
H. 'Neyron Rose'

H. 'Joan Senior'

H. 'Stoke Poges'

H. 'Always Afternoon'

H. 'Siloam Baby Talk'



H. 'Luxury Lace'

H. 'Pink Damask'

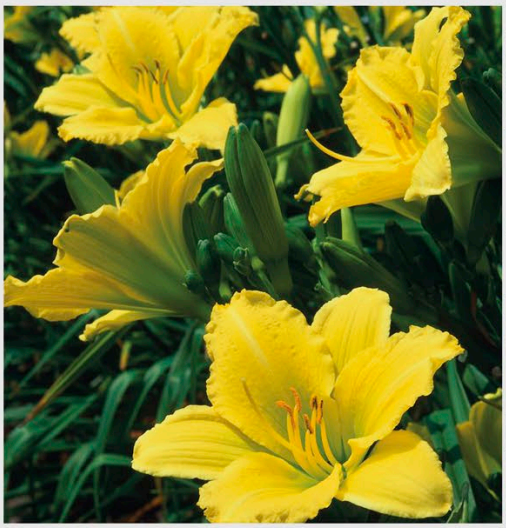
H. 'Summer Wine'

H. 'Canadian Border Patrol'

H. 'Cherry Cheeks'

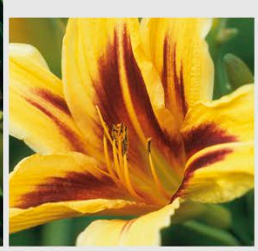
H. 'Night Beacon'

H. 'Prairie Blue Eyes'



H. 'Green Flutter'

H. 'Whichford'

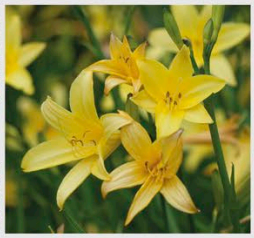


H. 'Bonanza'

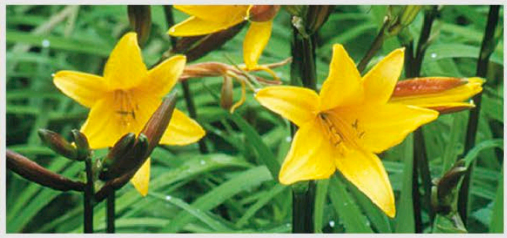
H. 'Lemon Bells'

H. 'Little Wine Cup'

H. lilioasphodelus



H. dumortieri



H. fulva

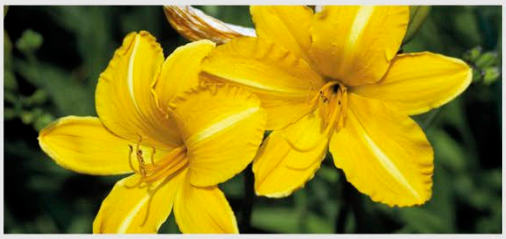
H. 'Missenden'

H. citrina

H. 'Cream Drop'

H. 'Little Grapette'

H. 'Golden Chimes'

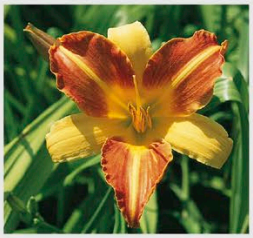


H. 'Cartwheels'

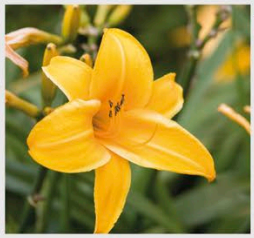
H. 'Stafford'

H. fulva 'Flore Pleno'

H. 'Mauna Loa'

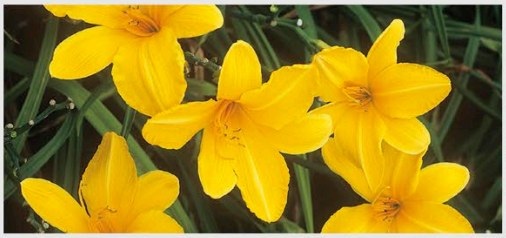


H. 'Frans Hals'



H. 'Chicago Sunrise'

H. 'Cathy's Sunset'



H. 'Burning Daylight'

H. 'Black Magic'

SUMMER

ORANGE

***Euphorbia griffithii* 'Fireglow'**
Bushy perennial that bears orange-red flowers in terminal umbels in early summer. Leaves are lance-shaped, mid-green, and have pale red midribs.
H to 3ft (1m), **S** 20in (50cm).

☼ ◑ Z4–9 ⓘ

Sphaeralcea ambigua
Branching, shrubby perennial. Broadly funnel-shaped, orange-coral blooms are produced singly in leaf axils from summer until the onset of cold weather. Leaves are soft, hairy, and mid-green.
H and **S** 30–36in (75–90cm).

☼ ◑ Z6–9

Asclepias tuberosa (Butterfly weed)
Erect, tuberous perennial with long, lance-shaped leaves. Small, 5-horned, bright orange-red flowers are borne in summer and followed by narrow, pointed pods, to 6in (15cm) long.
H to 30in (75cm), **S** 18in (45cm).

☼ ◑ Z4–9 ⓘ

***Verbascum* 'Cotswold Beauty'**
Rosette-forming perennial with sometimes-branched spires of 5-petaled, pale coppery-apricot flowers, each with a soft purple center, in summer. Has ovate, gray-green leaves. May be short-lived in rich soil. **H** 4ft (1.2m), **S** 16in (40cm).

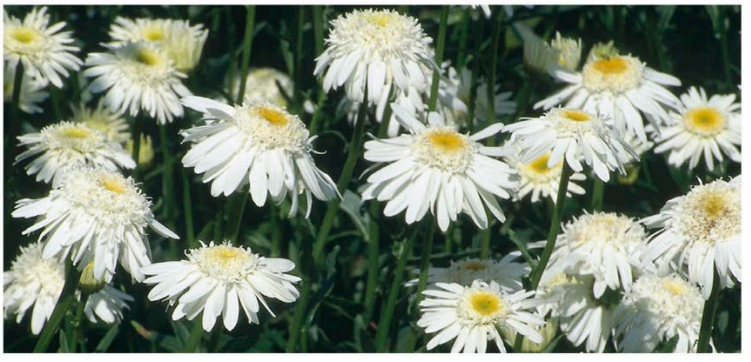
☼ ◑ Z5–9

FALL

WHITE

Actaea pachypoda
(Doll's eyes, White baneberry)
Compact, clump-forming perennial with spikes of small, fluffy, white flowers in summer and clusters of white berries, borne on stiff, fleshy scarlet stalks, in fall.
H 3ft (1m), **S** 20in (50cm).

☀ ◑ Z4–9 ⓘ



***Leucanthemum* x *superbum* 'Wirral Pride'**
Robust, clump-forming perennial with glossy, dark green, slightly toothed leaves. Bears numerous, solitary, white double flower heads with yellowish anenome centers from early summer to fall. **H** to 3ft (1m), **S** 2ft (60cm).

☼ ◑ Z5–8

PINK

***Chrysanthemum* 'Clara Curtis'**
Bushy perennial producing many clusters of flat, daisylike, clear pink flower heads throughout summer and fall. Divide plants every other spring. **H** 30in (75cm), **S** 18in (45cm).

☼ ◊ Z4–8 ⓘ

Tricyrtis formosana
Upright, rhizomatous perennial. In early fall, bears spurred flowers, heavily spotted with purplish-pink and with yellow-tinged throats. Glossy, dark green leaves clasp stem. **H** 2–3ft (60cm–1m), **S** 18in (45cm).

☼ ◊ Z6–9

***Anemone hupehensis* 'Hadspen Abundance'**
Erect, branching perennial that bears pink flowers with rounded, dark reddish-pink outer tepals from summer to fall. Leaves are dark green and deeply divided, with toothed leaflets. **H** 2–4ft (60cm–1.2m), **S** 18in (45cm).

☼ ◊ Z5–7 ⓘ

YARROW

Stalwarts of the summer garden, yarrow (*Achillea*) are easy-to-grow perennials for sunny sites and well-drained soils. Taller types are best planted toward the back of herbaceous borders, while shorter forms associate well with grasses in naturalistic planting schemes. Both selections also look at home in mixed beds and gravel gardens. Most have flattened flower heads, creating a horizontal plane that contrasts well with vertical flower spikes. Available in a range of colors, including white, yellow, pink, peach, and red, the flowers change color as they age, creating a two-tone effect. Many make good cut flowers; some can also be dried.

***A. ptarmica* 'The Pearl'** ⓘ

***A.* 'Heidi'**

***A. millefolium* 'Red Velvet'**

***A.* 'Belle Epoque'**

***A. filipendulina* 'Parker's Variety'**

***A. millefolium* 'Lansdorferglut'**

***A.* 'Christine's Pink'**

***A.* 'Terracotta'**

***A.* 'Lachsschönheit'**

HELENIUM

Of all the late-summer, daisy-flowered perennials, *Helenium* are among the most colorful. They have become increasingly popular with the rise of naturalistic plantings, to which they are well suited, although they also add a dramatic note to herbaceous borders. The stout stems bear shuttlecock-shaped flowers in fiery tones of red, orange, and yellow that last for many weeks. Plants seldom need staking and form slowly spreading clumps if grown in sun and fertile soil. To lengthen the flowering season, select a variety of forms, and cut back some in early summer to promote later flowering.

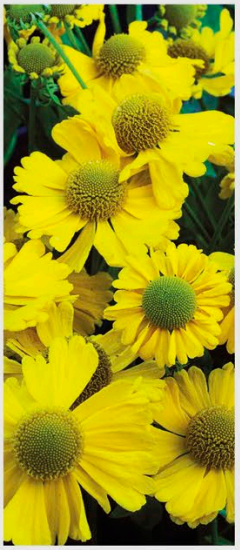
***H.* 'Bruno'** ⓘ

***H.* 'Indianersommer'**

***H.* 'Potter's Wheel'**

***H.* 'Double Trouble'**

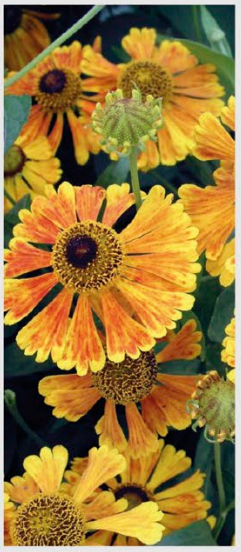
***H.* 'Red Army'**



***H.* 'Butterpat'**

***H.* 'Feuersiegel'**

***H.* 'Rubinzwerg'**



***H.* 'Waltraut'**

MEDIUM

FALL

RED

Centranthus ruber (Red valerian)
Perennial forming spreading colonies of fleshy leaves. Branching heads of small, star-shaped, deep reddish-pink or white flowers are borne above foliage from late spring to fall. Thrives in poor, exposed sites. **H** 2–3ft (60–90cm), **S** 1½–2ft (45–60cm) or more.

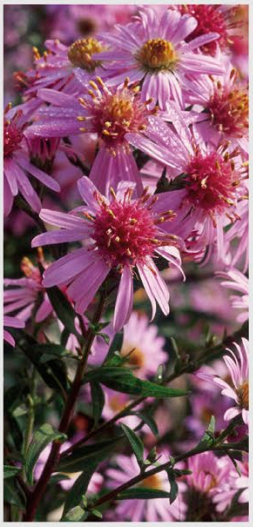
☼ 💧Z5–8

***Lobelia cardinalis* 'Queen Victoria'**
Clump-forming perennial. From late summer to mid-fall, spikes of blazing red flowers on branching stems arise from basal, deep red-purple foliage. **H** 3ft (1m), **S** 1ft (30cm).

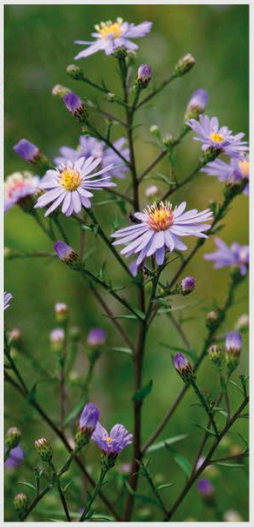
☼ 💧Z3–9 ⓘ

MICHAELMAS DAISIES

Invaluable border plants, Michaelmas daisies (comprising *Aster* and *Symphyotrichum*, mostly *S. novae-angliae* and *S. novi-belgii* species and cultivars) flower later than many other perennials and continue the display until late fall. The smaller-flowered species and selections associate well with grasses and naturalistic planting schemes, while the larger flowers are excellent for cutting. The daisylike, single or double flowers range in color from white, pink, and red to purple and blue. Michaelmas daisies thrive in sun or partial shade and well-drained soil, and tall cultivars may need staking. For large flowers, pinch out weaker shoots in spring; for bushier plants with a greater number of smaller flowers, pinch out the top 1–2in (2.5–5cm) of all shoots in late spring.



***Symphyotrichum* 'Coombe Fishacre'**



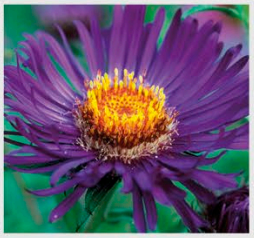
***Symphyotrichum* 'Photograph'**

***Symphyotrichum novi-belgii* 'Chequers'**

***Aster amellus* 'Veilchenkönigin'**

***Symphyotrichum novi-belgii* 'Apple Blossom'**

***Aster* x *frikartii* 'Wunder von Stäfa'**



***Symphyotrichum novae-angliae* 'Violetta'**

***Symphyotrichum novi-belgii* 'Marie Ballard'**

***Symphyotrichum novae-angliae* 'Harrington's Pink'**

***Symphyotrichum novae-angliae* 'Rosa Sieger'**

***Symphyotrichum* 'Little Carlow'**

***Symphyotrichum ericoides* 'Golden Spray'**

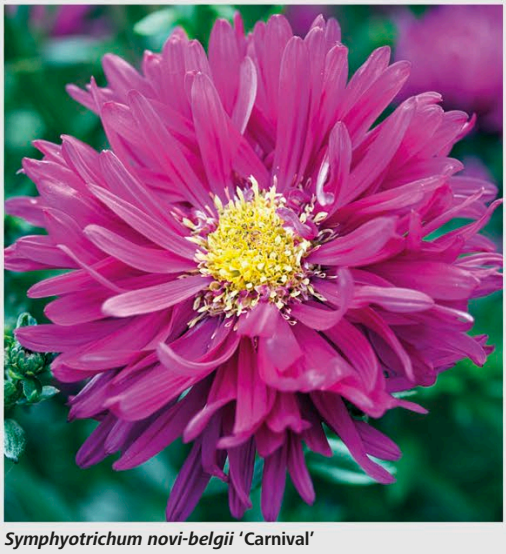
***Symphyotrichum cordifolium* 'Silver Spray'**

***Symphyotrichum novi-belgii* 'Freda Ballard'**

***Symphyotrichum novi-belgii* 'Orlando'**

***Symphyotrichum novi-belgii* 'Professor Anton Kippenberg'**

***Symphyotrichum ericoides* 'White Heather'**



***Symphyotrichum novi-belgii* 'Carnival'**

***Symphyotrichum* 'Sunhelene'**

BLUE

Strobilanthes wallichii
Upright, branching perennial with ovate, toothed leaves. Spikes of numerous, violet-blue to purple flowers are borne in summer–fall. **H** to 4ft (1.2m), **S** to 2ft (60cm).

☼ ◊ Z5–9

PURPLE

***Aster amellus* 'King George'**
Bushy perennial with ovate, rough leaves. In fall, produces many large, terminal, daisylike, deep blue-violet flower heads with yellow centers. **H** and **S** 20in (50cm).

☼ ◊ Z5–8

Gentiana asclepiadea
(Willow gentian)
Arching perennial with narrow, ovate leaves, to 3in (8cm) long. In late summer to fall, bears arching sprays of trumpet-shaped, deep blue flowers, spotted and striped inside. **H** to 3ft (90cm), **S** to 2ft (60cm).

☼ ◑ Z6–9

Eryngium* x *tripartitum
Perennial with wiry stems above a basal rosette of coarsely toothed, gray-green leaves. Conical, metallic-blue flower heads on blue stems are borne in summer–fall and may be dried for winter decoration. **H** 3–4ft (1–1.2m), **S** 20in (50cm).

☼ ◊ Z5–8

SALVIAS

Hardy perennial salvias are useful plants, many flowering profusely in late summer and lasting well into fall. The genus is quite diverse, with plants in a range of sizes and flower colors, including white, true blue, purple, pink, and red. A few, such as *S. argentea,* are also grown for their foliage, which in many species is aromatic. Salvias thrive in hot, sunny sites and free-draining soil, and grow quickly, many developing into shrublike plants within a season. To ensure they survive cold winters, in fall spread a thick mulch over the plants to protect the roots.

***S. pratensis* 'Pink Delight'**

***S.* x *sylvestris* 'Blauhügel'**

***S.* x *sylvestris* 'Mainacht'**

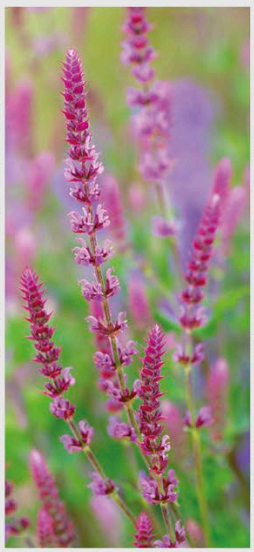
***S. nemorosa* 'Caradonna'**

***S. pratensis* 'Indigo'**

***S. nemorosa* 'Lubecca'**

***S. guaranitica* 'Black and Blue'**

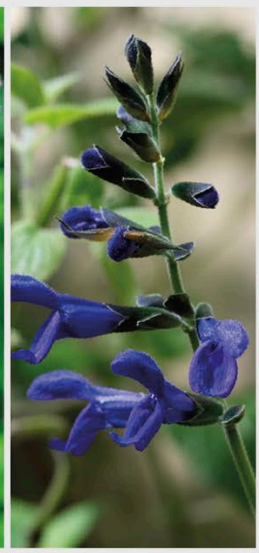
***S. pratensis* 'Swan Lake'**



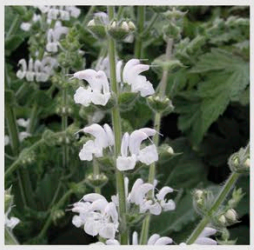
***S. nemorosa* 'Amethyst'**

***S. nemorosa* 'Ostfriesland'**

***S. verticillata* 'Purple Rain'**



S. patens



S. argentea

S. glutinosa

YELLOW

***Kniphofia* 'Percy's Pride'**
Upright perennial with large, terminal spikes of creamy flowers, tinged green and yellow, borne on erect stems in fall. Protect crowns with winter mulch.
H 3ft (1m), **S** 20in (50cm).

☼ ◊ Z6–9

Kirengeshoma palmata
Upright perennial with rounded, lobed, bright green leaves, above which strong stems bearing clusters of narrowly funnel-shaped, creamy yellow flowers appear in late summer to fall. **H** 3ft (1m), **S** 2ft (60cm).

◑ ◊ pH Z5–8

Euphorbia schillingii
Robust, clump-forming perennial that produces long-lasting, yellow cyathia and rounded, greenish-yellow bracts from midsummer to mid-fall. Stems are erect and leaves are dark green with pale green or white veins.
H 3ft (1m), **S** 1ft (30cm).

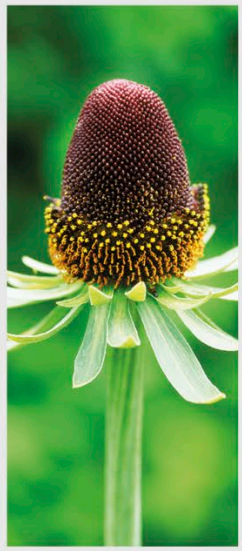
◑ ◊ Z7–9 ⓘ

***Solidago* 'Goldenmosa'**
Clump-forming perennial. Sprays of tufted, mimosalike, yellow flower heads are borne in late summer and fall above lance-shaped, toothed, hairy, yellowish-green leaves. **H** 3ft (1m), **S** 2ft (60cm).

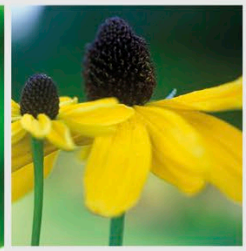
☼ ◊ Z5–9

RUDBECKIA

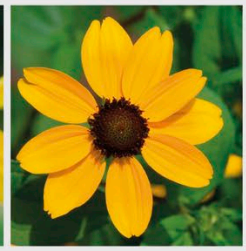
The golden daisy flowers of *Rudbeckia* illuminate late summer and early fall borders, perennial schemes, and gravel gardens. Most are just over knee-height, but some forms of *R. hirta* are small and compact, ideal for the front of beds or containers, while others, like *R.* 'Herbstonne', tower above the rest, reaching up to 8ft (2.5m) in height. *R. maxima* also has attractive glaucous blue foliage. All types produce large flowers on stout stems that seldom need staking, and the blooms also attract beneficial insects. *Rudbeckia* thrive in an open, sunny situation and moist but free-draining soil.



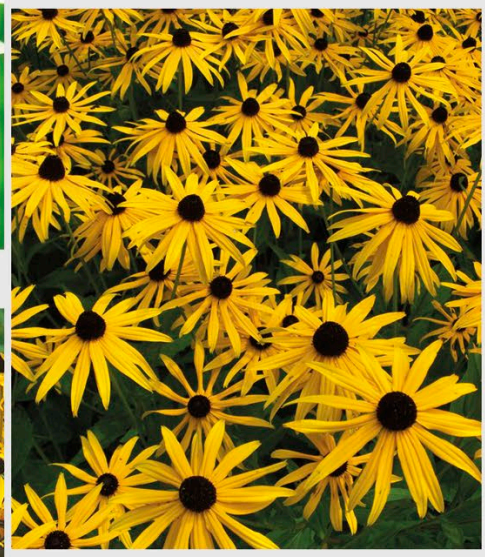
***R. occidentalis* 'Green Wizard'**



R. maxima

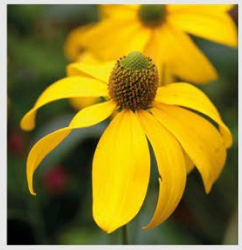


R. triloba

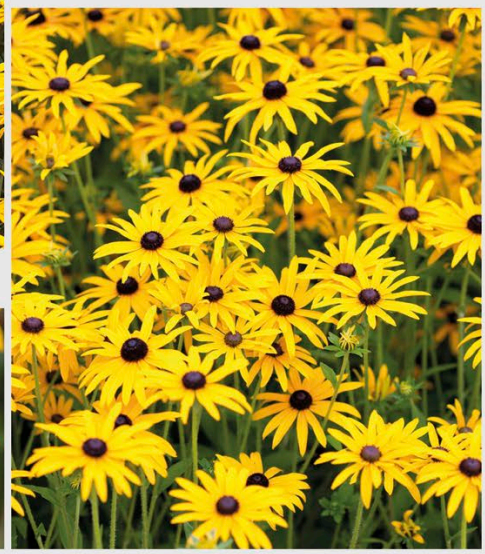


R. fulgida* var. *speciosa

***R. fulgida* var. *sullivantii* 'Goldsturm'**



***R. laciniata* 'Herbstsonne'**

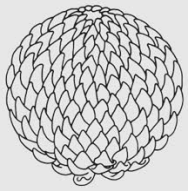


R. fulgida* var. *deamii

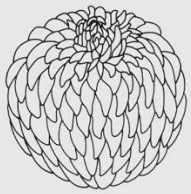
CHRYSANTHEMUMS

Florist's chrysanthemums, as well as those that are grown as hardy garden plants, are grouped according to their flower forms, approximate flowering season (early, mid-, or late fall), and habit. The best groups for garden decoration are the sprays, pompons, and semi-pompons, the hardy Korean, and early, reflexed chrysanthemums. The dwarf Charm-types, forming dense, domed masses of flowers, are most attractive displayed in pots for both indoor and outdoor use in fall. Most of the various flower forms are described below, with further details in the Plant Dictionary under *Chrysanthemum*.

Incurved—fully double, dense, spherical flowers have incurved petals arising from the base of the flower and closing tightly over the crown.



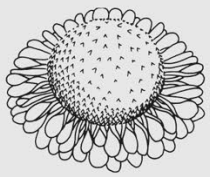
Fully reflexed—fully double flowers have curved, pointed petals reflexing outward and downward from the crown, back to touch the stem.



Reflexed—fully double flowers are similar to those of fully reflexed forms, except that the petals are less strongly reflexed and form an umbrella-like or spiky outline.

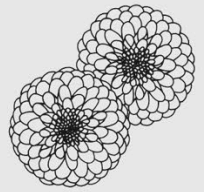
Intermediate—fully double, roughly spherical flowers have loosely incurving petals, which may close at the crown or reflex for the bottom half of each flower.

Anemone-centered—single flowers each have a central, dome-shaped disk, up to half the diameter of the bloom, and up to 5 rows of flat, or occasionally spoon-type, ray petals at right angles to the stem.

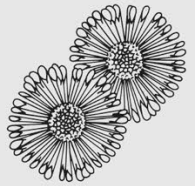


Single—flowers each have about 5 rows of flat petals, borne at right angles to the stem, that may incurve or reflex at the tips; the prominent, central disc is golden throughout or has a small, green centre.

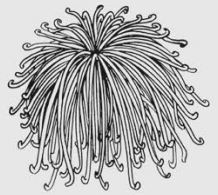
Pompon—fully double, dense, spherical, or occasionally hemispherical, flowers, have tubular petals with flat, rounded tips, growing outwards from the crown.



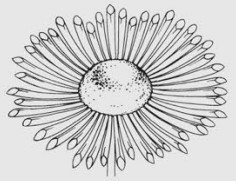
Spoon-shaped—flowers are similar to those of single forms, except that the ray petals are tubular and each opens out at the tip to form a spoon shape.

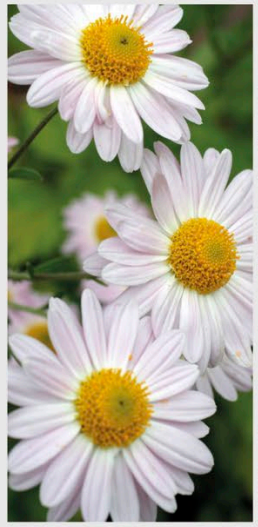


Spider-form—double flower heads with long, thin ray-florets; the outer ray-florets are more or less pendent, the inner ones curling upward.



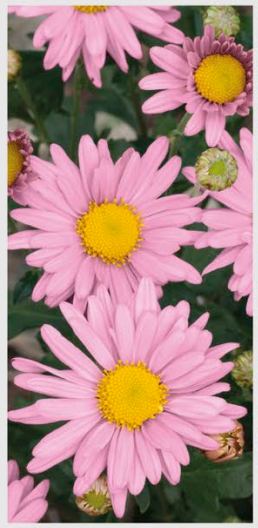
Quill-shaped—double flower heads with tubular ray-florets that have slanting openings at the tips, like quills.



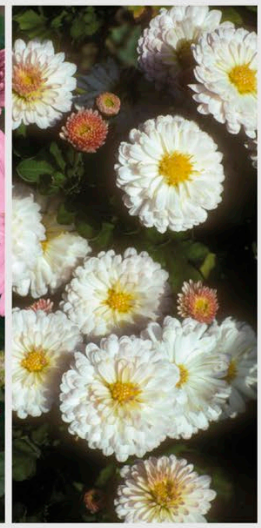


C. **'Innocence'** ⓘ [Rubellum Group; single]

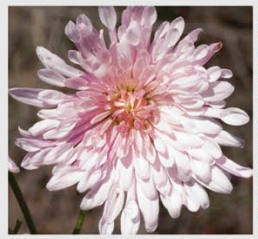
C. **'Pennine Oriel'** ⓘ [Florist's; anemone-centered]



C. **'Nell Gwynn'** ⓘ [Korean Group; single]

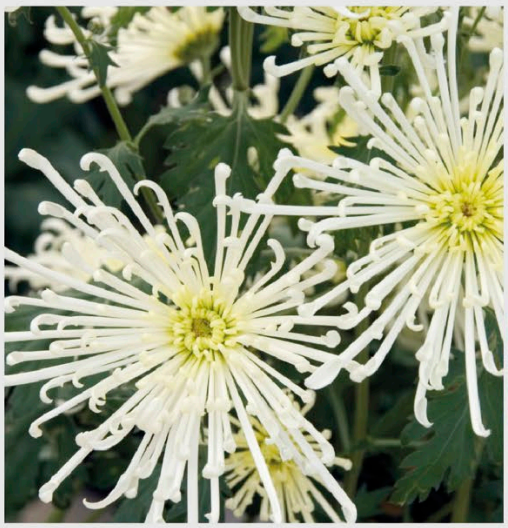


C. **'Purleigh White'** ⓘ [Florist's; semi-pompon]

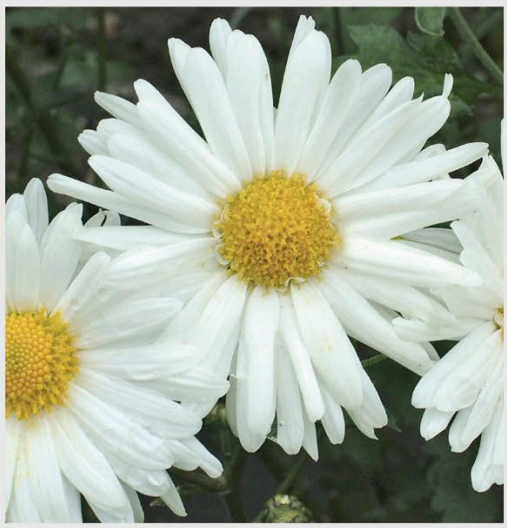


C. **'Emperor of China'** ⓘ [Rubellum Group; double]

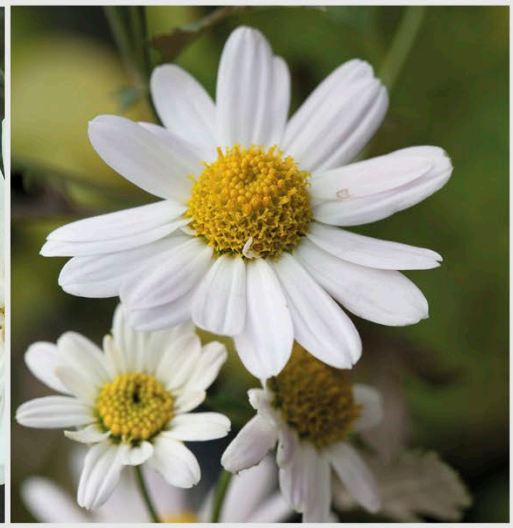
C. **'Enbee Wedding'** ⓘ [Florist's spray, single]



C. CHESAPEAKE ⓘ [Florist's spray; spider-form, quill]

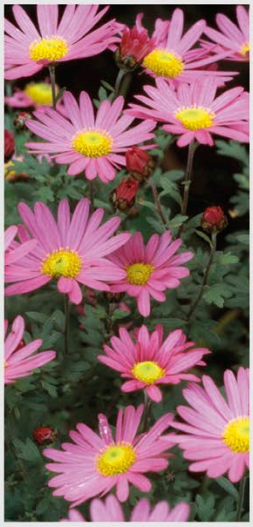


C. **'Spartan Seagull'** ⓘ [Korean Group; single]



C. **'Aunt Millicent'** ⓘ [Korean Group; single]

***C.* 'Anastasia'** ⓘ
[Florist's; semi-pompon]



***C.* 'Tapestry Rose'** ⓘ
[Korean Group; single]

***C.* 'Ruby Mound'** ⓘ
[Korean Group; reflexed]

***C.* 'Mary Stoker'** ⓘ
[Rubellum Group; single]

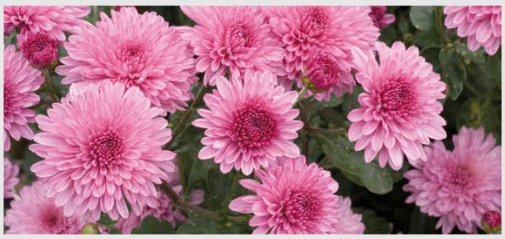
***C.* 'Nantyderry Sunshine'** ⓘ
[Florist's; semi-pompon]

***C.* 'Carmine Blush'** ⓘ
[Rubellum Group; single]

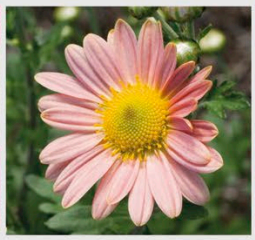
***C.* 'Rumpelstilzchen'** ⓘ
[Korean Group; single]

***C.* 'Golden Chalice'** ⓘ
[Florist's Charm; single]

***C.* 'Yellow John Hughes'** ⓘ
[Florist's; incurved]



***C.* 'Grandchild'** ⓘ [Korean Group; double reflexed]

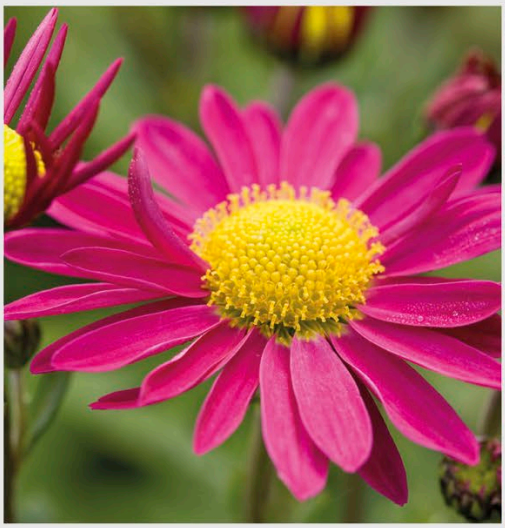


***C.* 'Perry's Peach'** ⓘ
[Korean Group; single]

***C.* 'Chelsea Physic Garden'** ⓘ
[Rubellum Group; double]

***C.* 'Bronze Elegance'** ⓘ
[Florist's; semi-pompon]

***C.* 'Sea Urchin'** ⓘ
[Korean Group; spider-form]



***C.* 'Mrs. Jessie Cooper'** ⓘ [Rubellum Group; single]

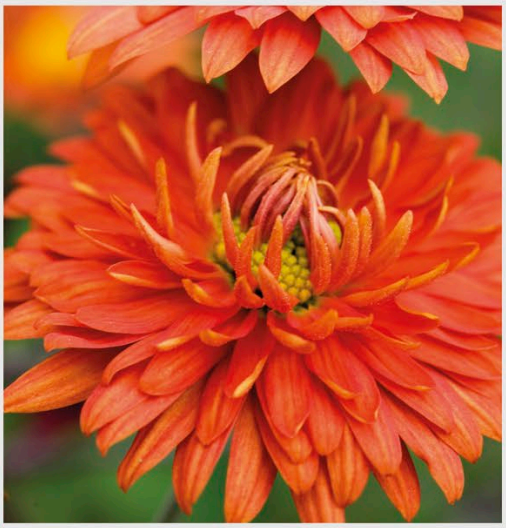
***C.* 'George Griffiths'** ⓘ
[Florist's; fully reflexed]

***C.* 'Doctor Tom Parr'** ⓘ
[Florist's; semi-pompon]

***C.* 'Cottage Apricot'** ⓘ [Korean Group; single]

***C.* 'Apollo'** ⓘ [Korean Group; semidouble]

***C.* 'Duchess of Edinburgh'** ⓘ [Korean Group; semidouble]



***C.* 'Paul Boissier'** ⓘ [Rubellum Group; semidouble]

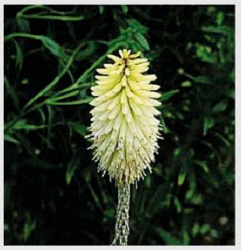
RED-HOT POKERS

Red-hot pokers *(niphofia)* are dramatic hardy perennials, their upright forms providing focal points in borders, gravel gardens, and perennial schemes. Spires of tubular flowers in a range of fiery colors, or more muted shades of green, ivory, and pale yellow, rise from clumps of slender, often evergreen, foliage. Selections flower from midsummer to late fall, and they enjoy an open site in full sun, with shelter from cold winds, and fertile, well-drained soil that does not dry out. Give them space to spread, as too much competition may limit their success. Protect plants over winter with a deep mulch.

K. 'Green Jade'

K. 'Wrexham Buttercup'

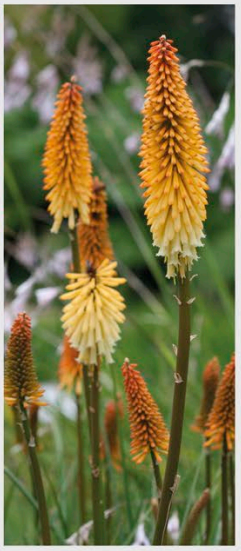
K. 'Royal Standard'



K. 'Ice Queen'

K. 'Toffee Nosed'

K. caulescens



K. 'Tawny King'

K. 'Bees' Sunset'

K. 'Prince Igor'

K. rooperi

MEDIUM

FALL

ORANGE

***Helenium* 'Moerheim Beauty'**
Upright perennial with strong, branching stems bearing sprays of daisylike, rich reddish-orange flower heads in early fall above dark green foliage. Needs regular division in spring or fall. **H** 3ft (1m), **S** 2ft (60cm).

☼ 💧Z4–8 ⓘ

Galatella linosyris (Goldilocks)
Upright, unbranched perennial with numerous small, dense, single, golden-yellow flower heads in late summer and fall. Leaves are narrowly lance-shaped. **H** 2ft (60cm), **S** 1ft (30cm).

◐ 💧Z3–8

SMALL

SPRING

WHITE

***Epimedium* x *youngianum* 'Niveum'**
Compact, deciduous, groundcover perennial with heart-shaped, serrated, bronze-tinted leaflets that turn green in late spring, when small, cup-shaped, snow-white flowers are borne. **H** 6–12in (15–30cm), **S** 12in (30cm).

◐ 💧Z5–9

***Lamium maculatum* 'White Nancy'**
Semievergreen, mat-forming perennial with white-variegated, mid-green foliage and spikes of hooded, white flowers in late spring and summer. **H** 6in (15cm), **S** 3ft (1m).

☼ 💧Z4–8

***Pulmonaria* 'Sissinghurst White'**
Semievergreen, clump-forming perennial that bears funnel-shaped, white flowers in spring above long, elliptic, mid-green, paler spotted leaves. **H** 1ft (30cm), **S** 1½–2ft (45–60cm).

☼ 💧Z6–8

Anemone narcissiflora
Leafy perennial that in late spring and early summer produces cup-shaped, single, white flowers with a blue or purplish-pink stain on reverse of petals. Leaves are dark green and deeply divided. **H** to 2ft (60cm), **S** 20in (50cm).

☀ ◑ Z5–8 ⓘ

Trillium grandiflorum (Wake-robin)
Clump-forming perennial. Large, pure white flowers that turn pink with age are borne singly in spring just above large, 3-parted, green leaves. **H** 15in (38cm), **S** 1ft (30cm).

☀ ◑ Z4–7

***Lamium maculatum* 'Album'**
Semievergreen, mat-forming perennial that has dark green leaves with central, white stripes. Bears clusters of hooded, white flowers in spring–summer. **H** 8in (20cm), **S** 3ft (1m).

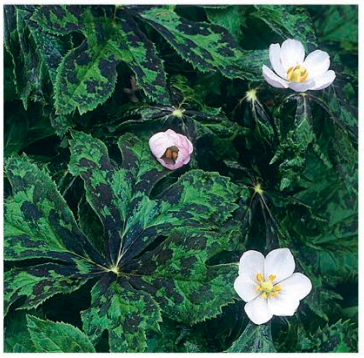
☀ ◑ Z4–8

***Bergenia* 'Silberlicht'**
Evergreen, clump-forming perennial that has flat, ovate, mid-green leaves with toothed margins. Clusters of white flowers, sometimes suffused with pink, are borne on erect stems in spring. **H** 1ft (30cm), **S** 20in (50cm).

☀ ◑ Z3–8

Convallaria majalis (Lily-of-the-valley)
Low-growing, rhizomatous perennial with narrowly ovate, mid- to dark green leaves and sprays of small, very fragrant, pendulous, bell-shaped, white flowers. Likes humus-rich soil. **H** 6in (15cm), **S** indefinite.

☀ ◑ Z2–7 ⓘ



Sinopodophyllum hexandrum
(Himalayan May apple)
Perennial with pairs of 3-lobed, brown-mottled leaves followed by white or pink flowers in spring and fleshy, red fruits in summer. **H** 1–1½ft (30–45cm), **S** 1ft (30cm).

☀ ◑ Z6–8 ⓘ

Pachyphragma macrophyllum
Creeping, mat-forming perennial with rosettes of rounded, long-stalked, glossy, bright green leaves, each to 4in (10cm) long. Bears many racemes of tiny, white flowers in spring. **H** to 1ft (30cm), **S** indefinite.

☀ ◑ Z5–9

Trillium ovatum
Clump-forming perennial with white flowers, later turning pink, that are carried singly in spring just above red-stalked, 3-parted, green foliage. **H** 10–15in (25–38cm), **S** 8in (20cm).

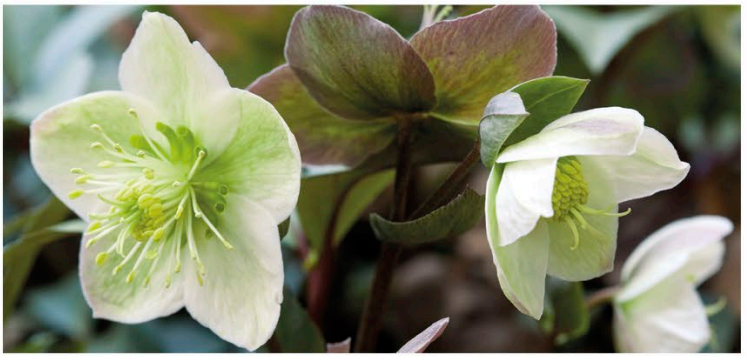
☀ ◑ Z5–8

Trillium chloropetalum
Clump-forming perennial with reddish-green stems carrying 3-parted, gray-marbled, dark green leaves. Flowers vary from purplish-pink to white and appear above foliage in spring. **H** and **S** 1–1½ft (30–45cm).

☀ ◑ Z6–9

Anemone sylvestris
(Snowdrop windflower)
Carpeting perennial that may be invasive. Fragrant, semi-pendent, white flowers with yellow centers are borne in spring and early summer. Has divided, mid-green leaves. **H** and **S** 1ft (30cm).

☀ ◑ Z3–9 ⓘ



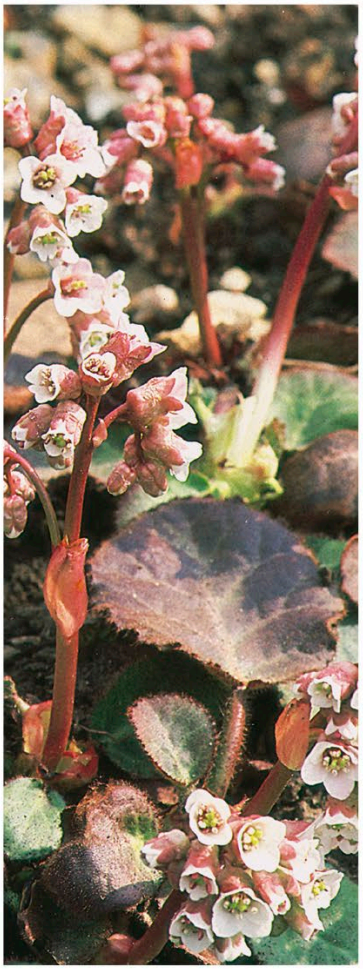
***Helleborus* x *ericsmithii* 'Bob's Best'**
Evergreen, clump-forming perennial with toothed, green leaves flushed in pewter and divided into 3–5 leaflets. From midwinter to late spring bears saucer-shaped, pink-tinted, white flowers. **H** 15in (38cm), **S** 18in (45cm).

☀ ◑ Z6–9 ⓘ

WHITE

Chrysosplenium macrophyllum
Evergreen, groundcover perennial with large, rounded, fleshy, mid-green leaves covered in silvery hairs. Lacy heads of flattish, pink-tinted, creamy flowers are borne in early spring. Spreads freely by runners. **H** 8in (20cm), **S** 3ft (90cm).

☀ ◐ Z6–8



Bergenia ciliata
Evergreen, clump-forming perennial with attractive, large, rounded, hairy leaves. In spring, bears clusters of white flowers that age to pink. Leaves are often damaged by frost, although fresh ones will appear in spring. **H** 1ft (30cm), **S** 20in (50cm).

☼ ◯ Z5–8

PINK

***Cypripedium* Ulla Silkens gx**
Deciduous, terrestrial orchid with 1–3 pouched, pastel white and pink flowers, 2–3in (5–7cm) long, borne in spring. Has broadly lance-shaped leaves, to 1ft (30cm) long. **H** 1ft (30cm), **S** 2ft (60cm).

◐ ◯ Z3–7

***Dicentra* 'Spring Morning'**
Neat, leafy perennial with small, heart-shaped, pink flowers hanging in arching sprays in late spring and summer. Attractive, fernlike foliage is gray-green and finely cut. **H** and **S** 1ft (30cm).

◐ ◯ Z3–9 ⓘ

***Bergenia* 'Beethoven'**
Evergreen, groundcovering perennial with masses of pink-tinged, white flowers, borne in branched panicles, in spring. Has spoon-shaped, leathery, mid-green leaves. Protect from spring frosts. **H** 16in (40cm), **S** 2ft (60cm) or more.

☼ ◯ Z4–8

***Geranium macrorrhizum* 'Ingwersen's Variety'**
Compact, carpeting perennial, useful as weed-suppressing groundcover. Small, soft rose-pink flowers are borne in late spring and early summer. Aromatic leaves turn bronze- and scarlet-tinted in fall. **H** 1ft (30cm), **S** 2ft (60cm).

☼ ◯ Z4–8

Helleborus thibetanus
Clump-forming perennial with palmate, mid-green leaves deeply divided into 7–9 toothed lobes. Bears deeply cup-shaped flowers, 1½–2¾in (4–6.5cm) across, in late winter–early spring that vary from white to white with pink veins, which darken with age. **H** and **S** to 1ft (30cm).

◐ ◐ Z5–8 ⓘ

Heloniopsis orientalis
Clump-forming perennial with basal rosettes of narrowly lance-shaped leaves, above which rise nodding, rose-pink flowers in spring. **H** and **S** 1ft (30cm).

◐ ◐ Z7–9

PRIMULAS

There are primulas to suit most garden situations, ranging from boggy areas and pond margins to woodlands, rock gardens, and containers. Of the various botanical groups, Candelabra, Auricula and Primrose-Polyanthus primulas are the most widely grown. Auriculas are compact evergreen plants with leathery leaves and flowers with beautiful markings; they grow well in moist but well-drained soil. Candelabras prefer damp soil and are taller and deciduous, with flowers arranged in rings up sturdy stems. The Primrose-Polyanthus group includes a diverse range of small winter to spring-flowering plants, often sold as bedding or for containers, that thrive in moist soil. Most prefer some shade. For full cultivation details see the Plant Dictionary.

P. 'Guinevere'

P. vialii

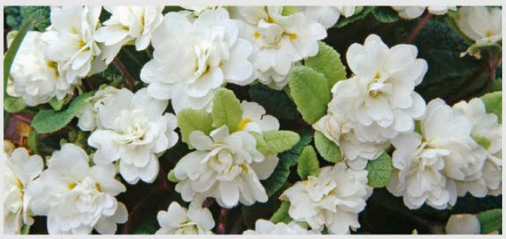
P. 'Lady Greer'

P. denticulata var. *alba*

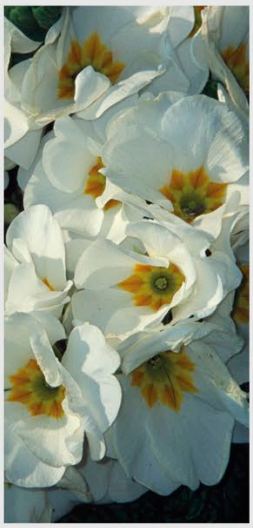
P. allionii

P. frondosa

P. japonica 'Miller's Crimson'



P. 'Dawn Ansell'

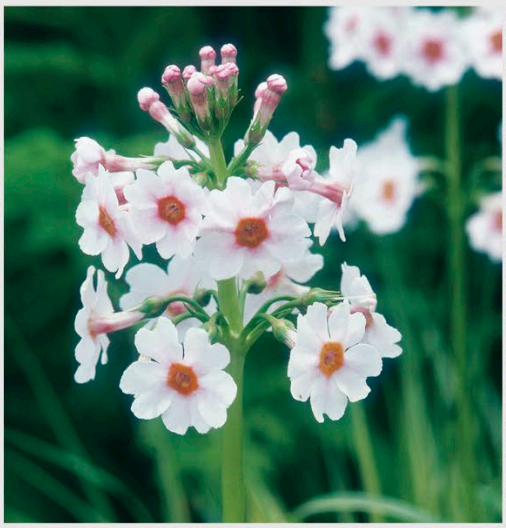


P. **Husky Series** [white]

P. 'Woodland Walk'

P. 'Blossom'

P. vulgaris 'Alba Plena'



P. japonica 'Postford White'

P. sieboldii 'Geisha Girl'

P. 'Craddock White'

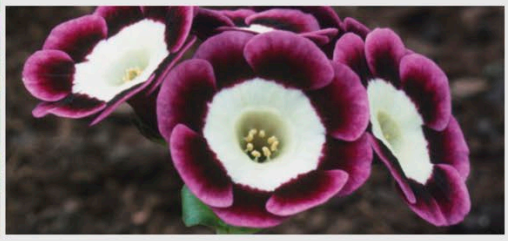
P. sieboldii

P. vulgaris subsp. *sibthorpii*

P. 'Elizabeth Killelay'

P. pulverulenta

P. 'Inverewe'



P. 'Mark' [Auricula]

P. polyneura

P. Crescendo Series

P. Barnhaven Blues Group

P. Crescendo Series 'Crescendo Bright Red'

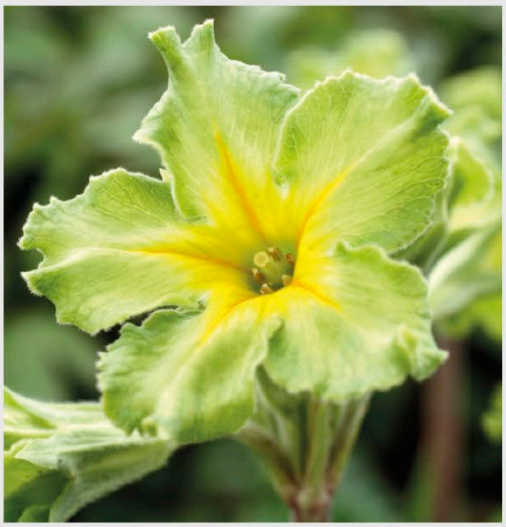
P. beesiana

P. Belarina Series 'Belarina Cobalt Blue'

P. 'Don Keefe'

P. 'Matthew Yates' [Auricula]

P. 'Miss Indigo'



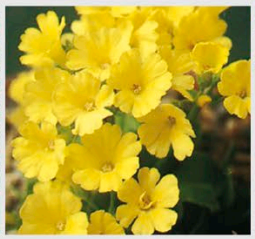
P. 'Fransisca'

P. sikkimensis

P. chungensis

P. palinuri

P. 'Margaret Martin' [Auricula]



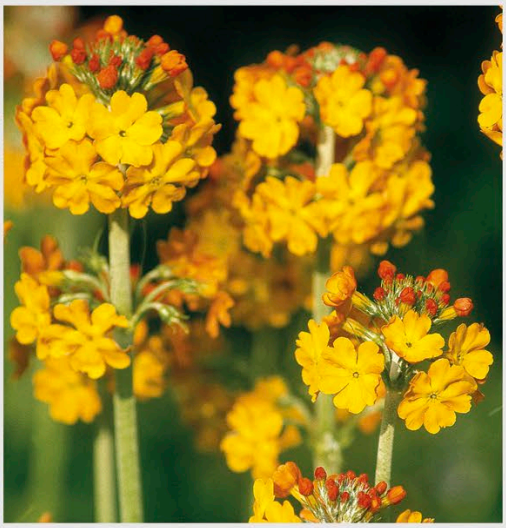
P. 'Blairside Yellow' [Auricula]

P. forrestii

P. aureata

P. elatior

P. veris 'Katy McSparron'

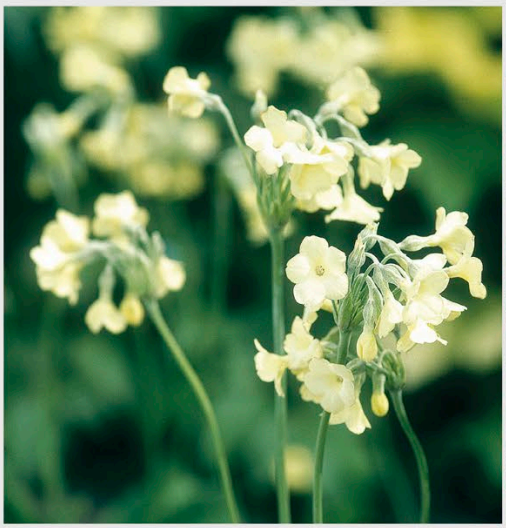


P. bulleyana

P. verticillata

P. x *kewensis*

P. Gold-laced Group



P. alpicola

P. vulgaris

P. 'Trouble' [Auricula]

RED

Epimedium x rubrum
Carpeting perennial with dense, heart-shaped, divided leaves that are dark brownish-red in spring, when clusters of cup-shaped, crimson flowers with yellow spurs are borne. **H** 1ft (30cm), **S** 8in (20cm).

☼ ◊ Z4–8

Trillium erectum
(Birthroot, Squawroot)
Clump-forming perennial with 3-lobed, mid-green leaves and bright maroon-purple flowers in spring. **H** 12–18in (30–45cm), **S** 1ft (30cm).

☼ ◊ Z4–7

Trillium sessile
(Toadshade, Wake-robin)
Clump-forming perennial that in spring bears red-brown flowers, nestling in a collar of 3-lobed leaves, marked white, pale green or bronze. **H** 12–15in (30–38cm), **S** 12–18in (30–45cm).

☼ ◊ Z4–8

PURPLE

Glaucidium palmatum
Leafy perennial that has large, lobed leaves and, in spring, large, delicate, cup-shaped, lavender flowers. A woodland plant, it requires humus-rich soil and a sheltered position. **H** and **S** 20in (50cm).

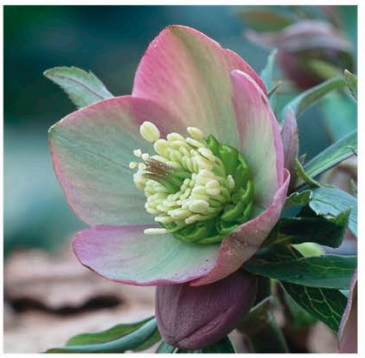
☼ ◐ Z6–9

Cardamine pentaphylla
Upright perennial spreading by fleshy, horizontal rootstocks. Produces clusters of large, white or pale purple flowers in spring. **H** 1–2ft (30–60cm), **S** 1½–2ft (45–60cm).

☼ ◐ Z5–9

Scopolia carniolica
Clump-forming perennial that produces spikes of nodding, purplish-brown flowers, yellow inside, in early spring. **H** and **S** 2ft (60cm).

☀ ◊ Z5–8 !



Helleborus purpurascens
Neat, clump-forming perennial with small, nodding, cup-shaped, deep purple or green flowers, splashed with deep purple on outside, in early spring. Dark green leaves are palmate and deeply divided into narrowly lance-shaped, toothed segments. **H** and **S** 1ft (30cm).

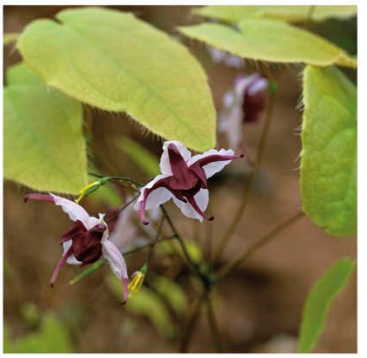
☼ ◐ Z4–8 !

Lathyrus vernus
Clump-forming perennial bearing, in spring, small, pealike, bright purple and blue flowers veined with red, several on each slender stem. Leaves are soft and fernlike. Proves difficult to transplant successfully. **H** and **S** 1ft (30cm).

☼ ◊ Z5–7 !

Lathraea clandestina (Toothwort)
Spreading perennial that grows as a parasite on willow or poplar roots. Fleshy, underground stems have colorless scales instead of leaves. Bears bunches of hooded, purple flowers from late winter to early spring. **H** 4in (10cm), **S** indefinite.

☼ ◐ Z5–9



Epimedium epsteinii
Rather compact, semievergreen, rhizomatous perennial with glossy green leaves divided into narrowly ovate, toothed leaflets. Has clusters of pendent, long-spurred, white-and-purple flowers in spring. Good for ground cover. **H** 1ft (30cm), **S** 16in (40cm).

☼ ◊ Z5–10

Lamium orvala
Clump-forming perennial that forms a mound of mid-green leaves, sometimes with central white stripes. Clusters of pink or purple-pink flowers open in late spring to early summer. **H** and **S** 1ft (30cm).

☼ ◊ Z4–8

BLUE

***Erysimum* 'Bowles's Mauve'**
Shrubby, short-lived perennial bearing many clusters of purple flowers, each with 4 spreading petals, from early spring to early summer. Has narrowly lance-shaped, dark green leaves. Best in poor soil. **H** 2ft (60cm), **S** 16in (40cm).

☼ ◊ Z6–10

Mertensia virginica
Elegant perennial with rich blue flowers, hanging in clusters in spring. Leaves are soft blue-green. Dies down in summer. Crowns are prone to slug damage.
H 1–2ft (30–60cm), **S** 1–1½ft (30–45cm).

☀ ◊ Z3–7

***Omphalodes cappadocica* 'Cherry Ingram'**
Clump-forming, rhizomatous perennial with ovate, deeply veined, pointed, mid-green leaves. In spring, bears loose racemes of 5-petaled, dark blue flowers.
H 1ft (30cm), **S** 2ft (60cm).

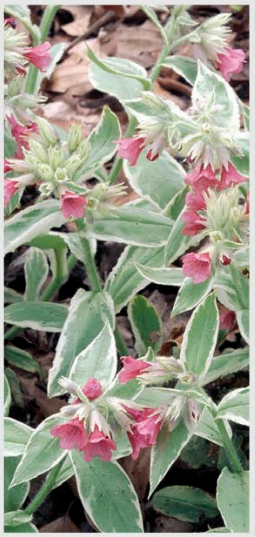
◐ ◊ Z6–8

***Brunnera macrophylla* 'Jack Frost'**
Groundcover perennial with heart-shaped, silvery-gray leaves. Delicate sprays of small, star-shaped, forget-me-notlike, blue flowers are produced in spring. Ideal in the front of a border.
H 2ft (60cm), **S** 2ft (60cm) or more.

☼ ◊ Z3–7

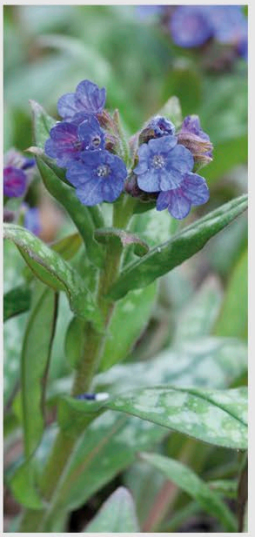
LUNGWORTS

Invaluable, shade-loving perennials, lungworts (*Pulmonaria*) produce clusters of bell-shaped, spring flowers and hairy, ground-covering foliage. Selections are available in a range of colors, from white through to pink, blue, and purple; *P. rubra* has red blooms. Some cultivars have also been selected for the beauty of their foliage, which may be spotted or streaked with white, or silver or variegated. Easy to grow, *Pulmonaria* thrive in cool areas in soil that does not dry out. During summer, trim off the old foliage and fresh leaves, often more prominently marked, will soon appear.



***P. rubra* 'David Ward'**

P. rubra

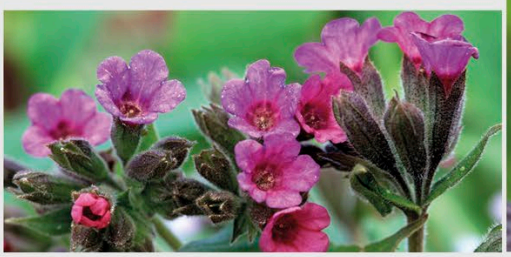


***P.* 'Lewis Palmer'**

***P.* 'Excalibur'**

***P.* OPAL ('Ocupol')**

***P.* 'Margery Fish'**



***P.* 'Mary Mottram'**

***P.* 'Mawson's Blue'**

GREEN

***Helleborus argutifolius* 'Silver Lace'**
Clump-forming perennial with evergreen, divided, spiny, bluish-green leaves and flared, cup-shaped, pale green flowers borne in large clusters in winter–spring. **H** 2ft (60cm), **S** 1½ft (45cm).

☼ ◊ Z6–9 ⓘ

Euphorbia cyparissias
Rounded, leafy perennial with a mass of slender, gray-green leaves and umbels of small, bright lime-green flowers in late spring. May be invasive. **H** and **S** 1ft (30cm).

☼ ◊ Z4–9 ⓘ

Euphorbia amygdaloides* var. *robbiae
Evergreen, spreading perennial with rosettes of dark green leaves, useful as groundcover even in poor, dry soil and semishade. Bears open, rounded heads of lime-green flowers in spring. **H** 1½–2ft (45–60cm), **S** 2ft (60cm).

◐ ◊ Z6–9 ⓘ

Helleborus* x *sternii
Evergreen, clump-forming perennial with divided leaves and cup-shaped, often pink-tinged, pale green flowers borne in terminal clusters in winter and early spring. **H** and **S** 1½ft (45cm).

◐ ◊ Z5–8 ⓘ

YELLOW

Anemone* x *lipsiensis
Prostrate, carpeting perennial that in spring bears many single, pale yellow flowers with bright yellow stamens. Leaves are deeply cut with long leaflets. **H** 6in (15cm), **S** 1ft (30cm).

◐ ◊ Z5–8 ⓘ

***Epimedium* x *versicolor* 'Neosulphureum'**
Evergreen, carpeting perennial with dense, heart-shaped, divided leaves, tinted reddish-purple in spring, when it bears cup-shaped, pale yellow flowers in small, pendent clusters on wiry stems. **H** and **S** 1ft (30cm).

◐ ◊ Z5–9

Uvularia grandiflora
(Bellwort, Merrybells)
Clump-forming perennial. Clusters of long, bell-shaped, yellow flowers hang gracefully from slender stems in spring. **H** 1½–2ft (45–60cm), **S** 1ft (30cm).

◐ ◊ Z3–7

***Valeriana phu* 'Aurea'**
Perennial with rosettes of lemon- to butter-yellow young foliage that turns mid-green by summer, when heads of insignificant, white flowers are borne. **H** 15in (38cm), **S** 12–15in (30–38cm).

☼ ◊ Z5–9

Adonis vernalis
Clump-forming perennial that in early spring produces buttercuplike, greenish-yellow blooms singly at the tips of stems. Mid-green leaves are delicately dissected. **H** and **S** 9–12in (23–30cm).

☼ ◊ Z4–7

Euphorbia epithymoides
Rounded, bushy perennial with mid-green leaves and heads of bright yellow flowers, borne for several weeks in spring. **H** and **S** 20in (50cm).

☼ ◑ Z5–9 ⓘ

ORANGE

WHITE

Primula veris (Cowslip)
Very variable, rosette-forming, evergreen or semievergreen perennial with tight clusters of fragrant, tubular, yellow flowers produced on stout stems in spring. Leaves are ovate to lance-shaped, toothed, and mid-green.
H and **S** 10in (25cm).

☼ ◑ Z3–8

Doronicum orientale **'Magnificum'**
Clump-forming perennial with heart-shaped, lush, soft green leaves. Short stems bear daisylike, bright yellow flower heads in spring. Plants may die down by late summer.
H 18in (45cm), **S** 16in (40cm).

☼ ◑ Z4–8

Anemone ranunculoides
Spreading perennial for damp woodland, bearing buttercuplike, single, deep yellow flowers in spring. Divided leaves have short stalks.
H and **S** 8in (20cm).

☼ ◑ Z4–8 ⓘ

Epimedium **x** ***warleyense***
Clump-forming, evergreen perennial with heart-shaped, divided, mid-green leaves, tinged purple-red, and cup-shaped, rich orange flowers borne in clusters on wiry stems in spring.
H and **S** 1ft (30cm).

☼ ◑ Z5–9

Papaver cambricum (Welsh poppy)
Spreading perennial that in late spring bears lemon-yellow or rich orange blooms. Double forms are available. Has deeply divided, fernlike foliage.
H 1–1½ft (30–45cm), **S** 1ft (30cm).

☀ ◑ Z6–8

Epimedium **'Amber Queen'**
Evergreen, clump-forming perennial with clusters of spidery, pendent, long-spurred, orange flowers, borne on wiry stems, in spring. Dark green leaves are mottled when young and divided into rounded heart-shaped, toothed leaflets. **H** 1ft (30cm), **S** 16in (40cm).

☼ ◑ Z5–9

Anthericum liliago (St. Bernard's lily)
Upright perennial that, in early summer, bears tall racemes of trumpet-shaped, white flowers above clumps of long, narrow, gray-green leaves.
H 1½–2ft (45–60cm), **S** 1ft (30cm).

☼ ◑ Z7–9

Tradescantia **Andersoniana Group 'Osprey'**
Clump-forming perennial with narrow, lance-shaped leaves, 6–12in (15–30cm) long. Bears clusters of white flowers with purple-blue stamens, surrounded by 2 leaflike bracts, in summer.
H to 2ft (60cm), **S** 1½ft (45cm).

☼ ◑ Z5–9 ⓘ

Leucanthemum **x** ***superbum*** **'Esther Read'**
Robust perennial with large, daisylike, double, white flower heads borne singly on strong stems in summer.
H and **S** 1½ft (45cm).

☼ ◑ Z5–8

Galium odoratum (Woodruff)
Carpeting perennial that bears star-shaped, white flowers above neat, whorled leaves in summer. All parts of the plant are aromatic. **H** 6in (15cm), **S** 1ft (30cm) or more.

☼ ◑ Z5–8

Geranium clarkei **'Kashmir White'**
Carpeting, rhizomatous perennial with divided leaves and loose clusters of cup-shaped flowers, white with pale lilac-pink veins, borne for a long period in summer. **H** and **S** 1½–2ft (45–60cm).

☼ ◑ Z5–8

WHITE

Deinanthe bifida
Slow-growing, clump-forming perennial with nodding, cup-shaped, white flowers. Has ovate, bristly, soft green leaves on short stems.
H 16in (40cm), **S** 1ft (30cm).

☼ ◊ Z4–8

Diplarrhena moraea
Clump-forming perennial with fans of long, strap-shaped leaves and clusters of irislike, white flowers, with centers of yellow and purple, borne on wiry stems in early summer. **H** 1½ft (45cm), **S** 9in (23cm).

☼ ◊ Z9–10

Anthemis punctata* subsp. *cupaniana
Evergreen, carpeting perennial with dense, finely cut, silvery foliage that turns green in winter. Small, daisylike, white flower heads with yellow centers are borne singly on short stems in early summer. **H** and **S** 1ft (30cm).

☼ ◊ Z6–9

Geranium renardii
Compact, clump-forming perennial with lobed, circular, sage-green leaves and purple-veined, white flowers, borne in early summer. **H** and **S** 1ft (30cm).

☼ ◊ Z6–8

Crambe maritima (Sea kale)
Robust perennial with a mound of wide, curved, lobed, silvery-green leaves. Bears large heads of small, fragrant, white flowers, opening into branching sprays in summer.
H and **S** 2ft (60cm).

☼ ◊ Z6–9

Melittis melissophyllum
(Bastard balm)
Erect perennial that in early summer bears white flowers with purple lower lips in axils of rough, ovate, mid-green leaves. **H** and **S** 1ft (30cm).

◐ ◊ Z6–9

PINK

Mimulus naiandinus
Spreading perennial, with hairy leaves, that in summer bears snapdragonlike, rose-pink flowers tipped with creamy-yellow and spotted deep pink. **H** 9in (23cm), **S** 10in (25cm).

☼ ◑ Z9–11

***Erigeron* 'Charity'**
Clump-forming perennial with a mass of daisylike, light pink flower heads with greenish-yellow centers borne for a long period in summer. May need some support. **H** and **S** to 2ft (60cm).

☼ ◊ Z5–8

x *Heucherella tiarelloides*
Evergreen, groundcover perennial that has dense clusters of leaves and produces feathery sprays of tiny, bell-shaped, pink flowers in early summer. **H** and **S** 1½ft (45cm).

◐ ◊ Z5–8

***Geranium* x *oxonianum* 'Wargrave Pink'**
Semievergreen, carpeting perennial with dense, dainty, lobed, basal leaves acting as weed-suppressing groundcover. Cup-shaped, bright salmon-pink flowers are borne throughout summer. **H** 1½ft (45cm), **S** 2ft (60cm).

☼ ◊ Z4–8

***Potentilla nepalensis* 'Miss Willmott'**
Clump-forming perennial with palmate, strawberrylike, bright green leaves. Numerous slender, branching stems bear cherry-red-centered, pink flowers throughout summer. **H** 20in (50cm), **S** 2ft (60cm).

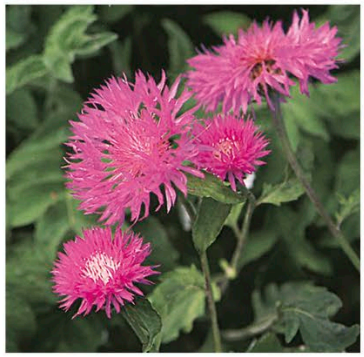
☼ ◊ Z4–7

Erodium manescavii
Mound-forming perennial with divided, ferny, blue-green leaves. Produces loose clusters of single, deep pink, darker blotched flowers throughout summer. **H** 1½ft (45cm), **S** 2ft (60cm).

☼ ◊ Z6–8

Persicaria macrophylla
Compact perennial producing neat spikes of rich rose-pink blooms above narrow, lance-shaped, leaves in late summer. **H** 1½–2ft (45–60cm), **S** 1ft (30cm).

☼ ◑ Z5–9 ⓘ



***Centaurea hypoleuca* 'John Coutts'**
Upright perennial. Deep rose-red flower heads, with thistlelike centers encircled by star-shaped ray petals, are borne on slender stems in summer. Deeply divided leaves are white-gray beneath. **H** 2ft (60cm), **S** 1½ft (45cm).

☼ ◊ Z3–9

Incarvillea mairei
Compact, clump-forming perennial that has short stems bearing several trumpet-shaped, purplish-pink flowers in early summer. Leaves are divided into ovate leaflets. Protect crowns with winter mulch. **H** and **S** 1ft (30cm).

☼ ◊ Z4–8

Lychnis flos-jovis
Clump-forming perennial producing round clusters of deep rose-pink flowers, opening in midsummer, that are set off by gray foliage. **H** and **S** 1½ft (45cm).

☼ ◊ Z4–8

Dactylorhiza foliosa
Deciduous, terrestrial orchid with spikes of bright purple or pink flowers, ½–¾in (1–2cm) long, borne in spring-summer. Has lance-shaped or triangular leaves, 4–8in (10–20cm) long, arranged spirally on stem. **H** 2ft (60cm), **S** 6in (15cm).

◑ ◊ Z7–8

Osteospermum jucundum
Evergreen, neat, clump-forming perennial with mid-green leaves. In late summer, soft pink flower heads, mostly dark-eyed, are borne singly but in great abundance. **H** and **S** 1ft (30cm).

☼ ◊ Z9–11

Incarvillea delavayi
Clump-forming perennial with deeply divided leaves and erect stems bearing several trumpet-shaped, pinkish-red flowers in early summer. Has attractive seed pods. **H** 1½–2ft (45–60cm), **S** 1ft (30cm).

☼ ◊ Z6–10

***Lychnis viscaria* 'Splendens Plena'**
Clump-forming perennial bearing spikes of double, magenta flowers in early summer. Stems and large, ovate to lance-shaped, basal leaves are covered in sticky hairs. **H** 1–1½ft (30–45cm), **S** 9in (23cm) or more.

☼ ◊ Z3–7

CARNATIONS AND PINKS

Although perhaps best known for providing excellent, long-lasting cut flowers, carnations and pinks (*Dianthus* cultivars) are highly ornamental border subjects, valued for their usually fragrant, clove-scented blooms, produced over a long period in summer, and their distinctive, silvery- or gray-green foliage. Shorter-growing cultivars—the old-fashioned and modern pinks—make excellent edging plants. Many of the flowers are attractively marked or have fringed petals. Carnations and pinks need an open, sunny position, preferably in alkaline soil. All except the perpetual-flowering carnations are frost hardy, and most can be easily propagated from cuttings. The myriad of carnation and pinks cultivars are divided into the following groups:

Border carnations—plants are of upright habit and flower prolifically in midsummer in a single flush; each stem bears 5 or more flowers. Picotee-flowered forms, with petals outlined in a darker, contrasting color, are available.

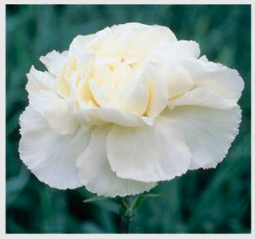
Perpetual-flowering carnations—similar in habit to border carnations, they are usually grown for cut flowers and bloom year-round under glass. Plants are normally disbudded, leaving one flower per stem, but spray forms have up to 5 flowers per stem.

Malmaison carnations—these produce intensely fragrant flowers sporadically throughout the year under glass.

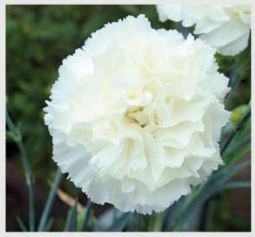
Old-fashioned pinks—these have a low, spreading habit and form neat cushions of foliage; masses of fragrant flowers are produced in midsummer. Good for border edging and cutting.

Modern pinks—usually more vigorous than old-fashioned pinks, they are repeat-flowering and produce 2 or 3 main flushes of flowers in summer. Cut or deadhead to encourage further flowering.

Alpine pinks—in early summer, these plants form cushions of small, scented flowers. Good for edging, or in a rockery, raised bed, trough, or alpine house.



***D.* 'Crompton Princess'**
[perpetual-flowering carnation]



***D.* 'Milky Way'**
[perpetual-flowering carnation]

***D.* 'Devon Flavia'**
[modern pink]

***D.* 'White Ladies'**
[old-fashioned pink]

***D.* 'Becky Robinson'**
[modern pink]

***D.* 'Mrs Sinkins'**
[old-fashioned pink]

***D.* 'Musgrave's Pink'**
[old-fashioned pink]

***D.* 'Haytor White'**
[modern pink]

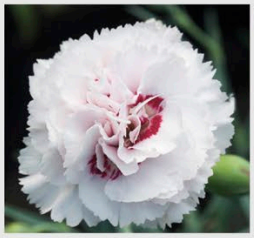
***D.* 'Brilliant Star'**
[modern pink]

***D.* 'Gran's Favourite'**
[old-fashioned pink]

***D.* 'Doris'**
[modern pink]

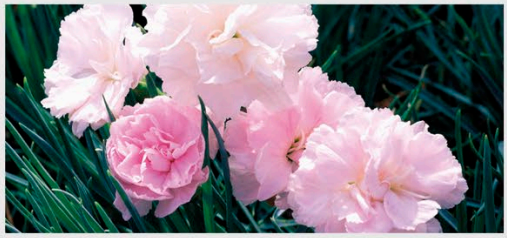
***D.* 'Duchess of Westminster'**
[Malmaison carnation]

***D.* 'Dad's Favourite'**
[old-fashioned pink]

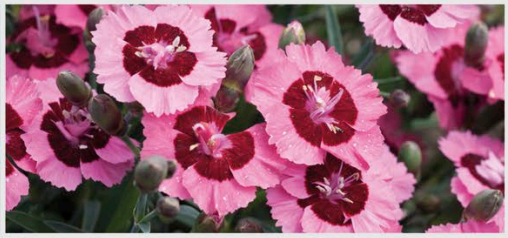


***D.* 'Cranmere Pool'** [modern]

***D.* 'Devon Dove'** [modern]

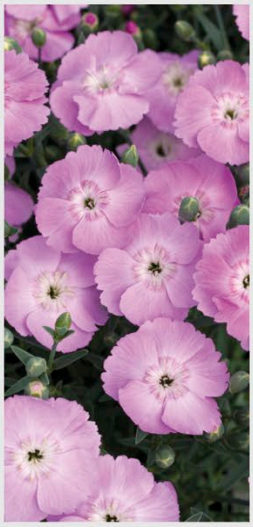


***D.* 'Inchmery'** [old-fashioned pink]



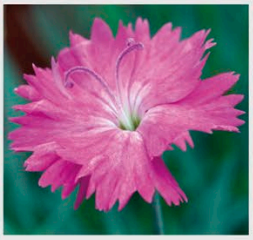
***D.* 'Evening Star'** [modern pink]

***D.* 'Rose de Mai'**
[old-fashioned pink]



***D.* STARLIGHT ('Hilstar')**
[modern pink]

***D.* TICKLED PINK ('DevonPp11')**
[modern pink]



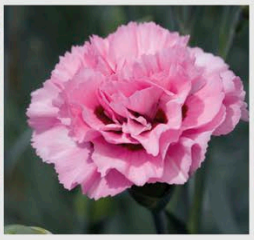
***D.* 'Neon Star'**
[modern pink]

***D.* 'Fusilier'**
[modern pink]

***D.* 'Feuerhexe'** [alpine pink]

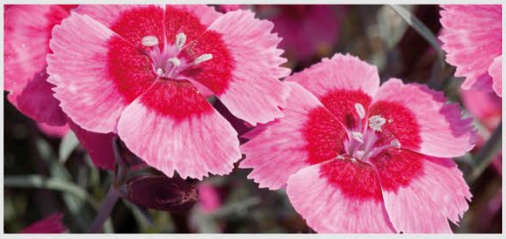
***D. superbus* 'Crimsonia'**
[old-fashioned pink]

***D.* 'Monica Wyatt'**
[modern pink]



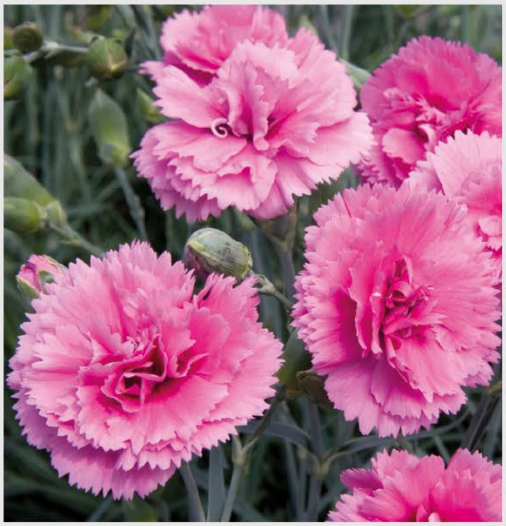
***D.* 'Valda Wyatt'**
[modern pink]

***D.* 'Tayside Red'**
[Malmaison carnation]



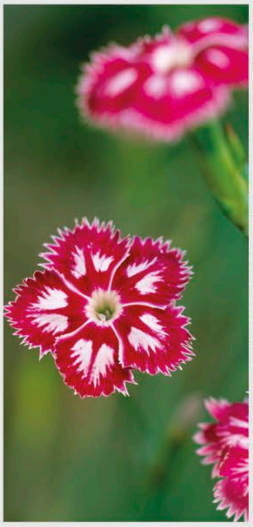
***D.* 'India Star'**
[modern pink]

***D.* 'Pixie Star'**
[modern pink]



***D.* LILY THE PINK ('Wp05 Idare')**
[modern pink]

***D.* 'Moulin Rouge'**
[modern pink]



***D.* 'Queen of Sheba'**
[old-fashioned pink]

***D.* 'Bovey Belle'**
[modern pink]

***D.* 'Devon Wizard'** [modern]

***D.* 'Pink Jewel'** [alpine pink]

***D.* PASSION ('WpPassion')** [modern pink]

***D.* 'Golden Cross'** [border carnation]

PINK

***Glandularia* 'Sissinghurst'**
Mat-forming perennial that throughout summer bears heads of brilliant pink flowers above mid-green foliage. Excellent for edging a path or growing in a tub. **H** 6–8in (15–20cm), **S** 1½ft (45cm).

☼ ◊ Z7–11

***Stachys officinalis* 'Hummelo'**
Mat-forming perennial with oblong, round-toothed, hairy, dark green leaves. Upright, sturdy stems bear whorls of small, tubular, 2-lipped, pink flowers in summer. **H** and **S** 2ft (60cm).

◑ ◊ Z5–8

***Dianthus* 'Houndspool Ruby'**
Modern pink with compact growth and bearing an abundance of strongly scented, semidouble, ruby-pink flowers, each with a deeper eye. **H** 1–1½ft (30–45cm), **S** 9–12in (23–30cm).

☼ ◊ Z5–9

***Geum* 'Bell Bank'**
Clump-forming perennial with cup-shaped, nodding, semidouble, pink flowers, slender, branching, hairy stems, in early summer. Has pinnate, lobed, mid-green leaves. Easily grown in any moist soil. **H** 2ft (60cm), **S** 1ft (30cm).

☼ ◊ Z5–8

RED

***Dicentra* 'Stuart Boothman'**
Tufted perennial with ovate, finely cut, deep gray-green leaves. In spring–summer, produces arching sprays of heart-shaped, carmine flowers. **H** 1ft (30cm), **S** 16in (40cm).

◑ ◊ Z3–9 ⓘ

***Potentilla* 'Arc-en-ciel'**
Clump-forming perennial with arching stems bearing loose sprays of large, saucer-shaped, double, yellow-centered, red flowers in late spring and summer. Has rounded, 3-lobed, toothed, mid-green basal leaves. **H** and **S** 30cm (1ft).

☼ ◊ Z4–8

Rhodiola heterodonta
Clump-forming perennial producing heads of yellow or red, sometimes greenish flowers from spring to early summer. Stems bear toothed, blue-green leaves. **H** 1½ft (45cm), **S** 10in (25cm).

☼ ◊ Z5–9

Lychnis coronaria
Clump-forming perennial, often grown as a biennial. From mid-to late summer, brilliant rose-crimson flowers are borne in panicles on branched, gray stems, above gray leaves. **H** 1½–2ft (45–60cm), **S** 1½ft (45cm).

☼ ◊ Z3–8

Crusea coccinea
Prostrate, creeping perennial with ovate, ribbed, light green leaves, 1¼–2in (3–5cm) long. Trumpet-shaped, bright red flowers, 1–1½in (2.5–4cm) long, in long-stalked, few-flowered, axillary clusters, are borne in summer–fall. **H** 6in (15cm), **S** 8–16in (20–40cm).

☀ ◊ Z10–11

***Coreopsis* 'Limerock Ruby'**
Upright perennial producing masses of daisylike, ruby-red flower heads, on branched, slender stems, throughout summer. Has small, lance-shaped, dark green leaves. **H** 16in (40cm), **S** 1½ft (45cm).

☼ ◊ Z7–9

Ourisia coccinea
Mat-forming, evergreen perennial with rosettes of ovate, toothed, strongly veined, bright green leaves. Loose racemes of tubular, nodding, rich red flowers are borne in mid- to late summer. **H** 8in (20cm), **S** 1ft (30cm).

☀ ◑ Z7–9

Potentilla atrosanguinea
Clump-forming perennial with hairy, palmate, strawberrylike leaves. Loose clusters of dark red flowers are borne throughout summer. **H** 1½ft (45cm), **S** 2ft (60cm).

☼ ◑ Z5–8

Polemonium carneum
Clump-forming perennial that bears clusters of cup-shaped, pink or lilac-pink flowers in early summer. Foliage is finely divided. **H** and **S** 45cm (1½ft).

☼ ◑ Z4–8

Verbena rigida
Neat, compact perennial bearing heads of pale violet flowers from midsummer onward. Has lance-shaped, rough, mid-green leaves borne on flower stems. **H** 1½–2ft (45–60cm), **S** 1ft (30cm).

☼ ◑ Z8–15

Centaurea montana
Spreading perennial with many rather lax stems carrying, in early summer, one or more large, purple, blue, white or pink flower heads with thistlelike centers encircled by star-shaped ray petals. **H** 20in (50cm), **S** 2ft (60cm).

☼ ◑ Z3–9

Geranium macrorrhizum
Semievergreen, carpeting perennial bearing magenta flowers in early summer. Rounded, divided, aromatic leaves make good, weed-proof groundcover and assume bright tints in fall. **H** 12–15in (30–38cm), **S** 2ft (60cm).

◐ ◑ Z4–8

Berkheya purpurea
Clump-forming perennial with large, daisylike, lavender flower heads in summer. Has oblong-lance-shaped, spiny, silvery-gray basal leaves. **H** 2ft (60cm), **S** 1ft (30cm).

☼ ◑ Z9–10

Geranium* x *magnificum
Clump-forming perennial with hairy, deeply lobed leaves and cup-shaped, prominently veined, violet-blue flowers borne in small clusters in summer. **H** 1½ft (45cm), **S** 2ft (60cm).

☼ ◑ Z4–8

Platycodon grandiflorus
(Balloon flower)
Neat, clump-forming perennial with clusters of large, balloonlike buds, opening to bell-shaped, purplish-blue flowers in summer. Stems are clothed with bluish leaves. **H** 1½–2ft (45–60cm), **S** 1–1½ft (30–45cm).

☼ ◑ Z4–9

***Tradescantia* Andersoniana Group 'Purple Dome'**
Clump-forming perennial with narrow, lance-shaped leaves, 6–12in (15–30cm) long. Bears clusters of rich purple flowers, surrounded by 2 leaflike bracts, in summer. **H** to 2ft (60cm), **S** 1½ft (45cm).

☼ ◑ Z5–9 ⓘ

Stokesia laevis
Perennial with overwintering, evergreen rosettes. In summer, cornflowerlike, lavender- or purple-blue flower heads are borne freely. Leaves are narrow and mid-green. **H** and **S** 1–1½ft (30–45cm).

☼ ◑ Z5–9

PURPLE

***Stachys macrantha* 'Superba'**
Clump-forming perennial with heart-shaped, soft, wrinkled, green leaves. Produces stout stems with whorls of hooded, purple-violet flowers in summer. **H** 1–1½ft (30–45cm), **S** 1–2ft (30–60cm).

☼ 💧Z5–8

Nepeta* x *faassenii (Catmint)
Bushy, clump-forming perennial, useful for edging. Forms mounds of small, grayish-green leaves, above which loose spikes of tubular, soft lavender-blue flowers are borne in early summer. **H** and **S** 1½ft (45cm).

☼ 💧Z4–8

Anemonopsis macrophylla
(False anemone)
Clump-forming perennial producing waxy, nodding, purple-blue flowers, borne on slender, branching stems in summer above fernlike leaves. **H** 1½–2ft (45–60cm), **S** 20in (50cm).

◐ 💧Z5–8

BLUE

***Geranium* himalayense**
Vigorous, clump-forming perennial, producing large, cup-shaped, violet-blue to deep mid-blue flowers on long stalks in summer over dense tufts of neatly cut leaves. **H** 1ft (30cm), **S** 2ft (60cm).

☼ 💧Z2–9

Eryngium bourgatii
Clump-forming perennial that, from mid- to late summer, bears heads of thistlelike, blue-green, then lilac-blue, flowers on branched, wiry stems well above deeply cut, basal, gray-green leaves. **H** 1–2ft (45–60cm), **S** 1ft (30cm).

☼ 💧Z5–9

***Catananche caerulea* 'Major'**
Perennial forming clumps of grassy, gray-green leaves, above which rise wiry, branching stems each bearing a daisylike, lavender-blue flower head in summer. Propagate regularly by root cuttings. **H** 1½–2ft (45–60cm), **S** 2ft (30cm).

☼ 💧Z3–8

Amsonia orientalis
Neat, clump-forming perennial. In summer, heads of small, star-shaped, gray-blue flowers are borne on wiry stems clothed with green, sometimes grayish, leaves. **H** 1½–2ft (45–60cm), **S** 1–1½ft (30–45cm).

☼ 💧Z5–8 ⓘ

Polemonium caeruleum
(Jacob's ladder)
Clump-forming perennial. Clusters of cup-shaped, lavender-blue flowers with orange-yellow stamens open in summer amid finely divided foliage. **H** and **S** 1½–2ft (45–60cm).

☼ 💧Z4–9

Polemonium caeruleum
BRISE D'ANJOU ('Blanjou')
Clump-forming, short-lived perennial with clusters of cup-shaped, lavender-blue flowers in summer. Has finely divided, mid-green leaves with creamy-yellow margins, paler if grown in shade. **H** 2ft (60cm), **S** 10–12in (25–30cm).

☼ 💧Z4–9

Eryngium variifolium
Evergreen, rosette-forming perennial with stiff stems that, in late summer, bear heads of thistlelike, gray-blue flowers, each with a collar of white bracts. Jagged-edged leaves are mid-green, marbled with white. **H** 1½ft (45cm), **S** 10in (25cm).

☼ ◊ Z5–9

***Scabiosa caucasica* 'Clive Greaves'**
Clump-forming perennial that throughout summer bears violet-blue flower heads with pincushionlike centers. Basal, mid-green leaves are lance-shaped and slightly lobed on the stems. **H** and **S** 1½–2ft (45–60cm).

☼ ◊ Z4–9

***Geranium* ROZANNE ('Gerwat')**
Sprawling, deciduous perennial producing a profusion of large, shallowly cup-shaped, blue flowers during summer and into fall. Rounded, deeply divided basal leaves are green with marbled, paler markings. **H** 14in (35cm), **S** 2ft (60cm) or more.

◐ ◊ Z4–9

Myosotidium hortensia
(Chatham Island forget-me-not)
Evergreen, clump-forming perennial bearing large clusters of forget-me-notlike, blue flowers in summer above a basal mound of large, ribbed, glossy leaves. **H** 1½–2ft (45–60cm), **S** 2ft (60cm).

◐ ◖ H4

Veronica umbrosa
Mat-forming perennial with ovate to lance-shaped, glossy, purple-tinged, mid-green leaves. Bears abundant, saucer-shaped, deep blue flowers, with small, white eyes, over a long period from early spring to summer. **H** to 4in (10cm), **S** 2ft (60cm) or more.

☼ ◊ Z6–8

Veronica gentianoides
Mat-forming perennial producing spikes of very pale blue flowers in early summer on long stems above glossy, basal leaves. **H** and **S** 1½ft (45cm).

☼ ◊ Z4–7

Parahebe perfoliata
(Digger's speedwell)
Evergreen subshrub with willowy stems clasped by leathery, glaucous leaves. Elegant, long, branching sprays of blue flowers are borne in summer. **H** 1½–2ft (45–60cm), **S** 1½ft (45cm).

☼ ◊ Z9–11

Veronica spicata* subsp. *incana
Mat-forming perennial, densely covered with silver hairs, with linear to lance-shaped leaves. In summer, bears spikes of small, star-shaped, clear blue flowers. **H** and **S** 1ft (30cm).

◐ ◖ Z3–8

HOSTAS

Their luxuriant foliage and attractive habit have made hostas, or plantain lilies, increasingly sought after as garden plants. Native to the East, they add an exotic touch to waterside or damp, shady corners and large patio containers. Hostas vary in size from plants a few inches in height, to tall forms that make clumps up to 5ft (1.5m) across. Their elegant, deciduous leaves appear in mid-spring and are incredibly diverse in shape, texture, and color, with dramatic shadings and variegations. Many produce decorative flower spikes, which rise gracefully above the foliage in midsummer and may be scented, according to the variety. Although hostas are essentially shade- and moisture-loving plants, preferring rich, well-drained soils, they also tolerate drier soils. Protect the leaves from slug damage.

H. 'Cherry Berry'

H. 'Devon Green'

H. 'Antioch'

H. 'Regal Splendor'

H. 'Gold Edger'

H. 'Invincible'

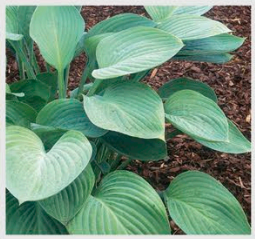
H. sieboldiana

H. 'Night Before Christmas'

H. 'Hadspen Blue'

H. 'Ground Master'

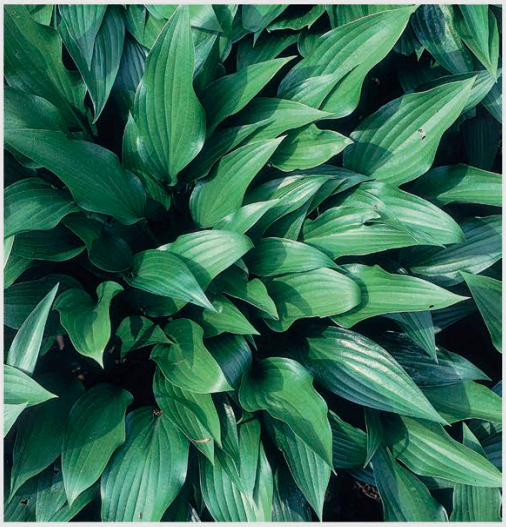
H. 'Minuteman'



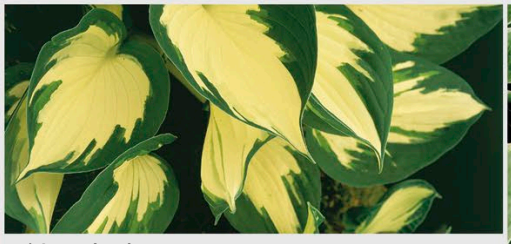
H. nigrescens

H. 'Halcyon'

H. 'June'



H. lancifolia

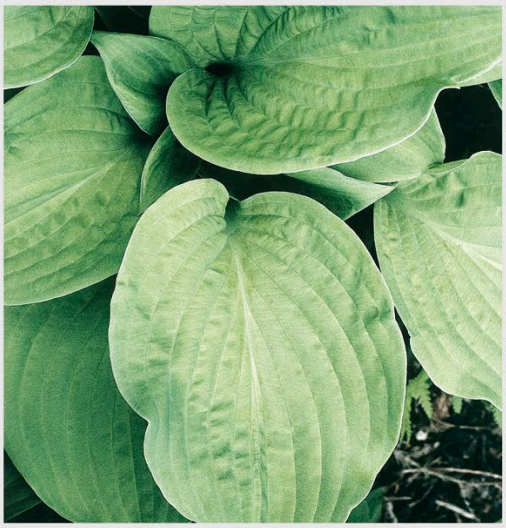


H. 'Fire and Ice'

H. 'Golden Tiara'

H. 'Golden Prayers'

H. 'Fragrant Bouquet'



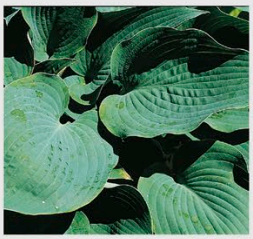
H. 'August Moon '

H. 'Whirlwind'

H. 'Frances Williams'

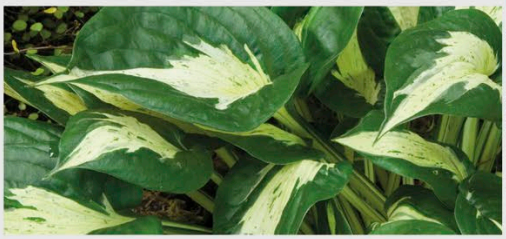
H. 'Vera Verde'

H. 'September Sun'



H. 'Blue Wedgwood'

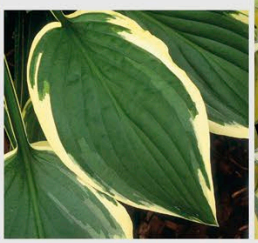
H. 'Allan P. McConnell '



H. 'Revolution'

H. 'Birchwood Parky's Gold'

H. 'Dream Weaver'



H. 'So Sweet'

H. 'Remember Me'

H. 'Sagae'

H. 'Ginko Craig'

H. 'Great Expectations'

H. 'Tattoo'

GRAY

***Artemisia ludoviciana* 'Valerie Finnis'**
Semievergreen, upright then arching perennial with silvery-gray leaves, the lower ones are broad and lobed while the upper ones are narrow and spear-shaped. Bears spires of insignificant, yellowish flowers in late summer. **H** 2ft (60cm), **S** 3ft (90cm).

☼ ◊ Z4–9

Stachys byzantina (Lamb's tongue)
Evergreen, mat-forming perennial with woolly, gray foliage that is excellent for a border front or as groundcover. Bears mauve-pink flowers in summer. **H** 12–15in (30–38cm), **S** 2ft (60cm).

☼ ◊ Z4–8

GREEN

***Mentha suaveolens* 'Variegata'**
(Variegated apple mint)
Spreading perennial with soft, woolly, mid-green leaves, splashed with white and cream, that smell of apples. Seldom produces flowers. **H** 1–1½ft (30–45cm), **S** 2ft (60cm).

☼ ◊ Z6–9

***Filipendula ulmaria* 'Aurea'**
Leafy perennial, grown for its divided foliage, which is bright golden-yellow in spring and pale green in summer. Clusters of creamy-white flowers are produced in branching heads in midsummer. **H** and **S** 1ft (30cm).

◐ ◊ Z5–9

Hosta tokudama* f. *aureonebulosa
Slow-growing, clump-forming perennial bearing cup-shaped, puckered, blue leaves with irregular, cloudy-yellow centers. Racemes of trumpet-shaped, pale lilac-gray flowers, on scapes 16in (40cm) long, are produced midsummer. **H** 1½ft (45cm), **S** 2½ft (75cm).

☀ ◊ Z3–8

YELLOW

Sisyrinchium striatum
Semievergreen perennial that forms tufts of long, narrow, gray-green leaves. Bears slender spikes of purple-striped, straw-yellow flowers in summer. Self seeds freely.
H 1½–2ft (45–60cm), **S** 1ft (30cm).

☼ ◊ Z7–8

***Origanum vulgare* 'Aureum'**
Woody-based perennial forming a dense mat of aromatic, golden-yellow, young leaves that turn pale yellow-green in midsummer. Occasionally bears tiny, mauve flowers in summer. **H** in leaf 3in (8cm), **S** indefinite.

☼ ◊ Z4–9

***Stachys byzantina* 'Primrose Heron'**
Evergreen, mat-forming perennial with woolly, yellowish-gray leaves, to 4in (10cm) long. Erect stems bear interrupted spikes of pink-purple flowers from early summer to early fall. **H** 1½ft (45cm), **S** 2ft (60cm).

☼ ◊ Z4–8

Alchemilla mollis (Lady's mantle)
Clump-forming, groundcover perennial that has rounded, pale green leaves with crinkled edges. Bears small sprays of tiny, bright greenish-yellow flowers, with conspicuous outer calyces, in midsummer that may be dried. **H** and **S** 20in (50cm).

◐ ◊ Z4–7

Calanthe striata
Deciduous, terrestrial orchid with erect spikes of fragrant, yellow or yellow-and-brown flowers, each with a 3-lobed lip, borne in late spring and early summer, before the 2–3 long, broadly oblong, ribbed leaves fully expand. **H** 32in (80cm), **S** 20in (50cm).

◐ ◑ pH Z6–9

Patrinia triloba
Clump-forming perennial with broad, 3- to 5-lobed, bright green leaves that turn yellow in fall. In summer, upright stems bear panicles of small, fragrant, 5-petaled, bright yellow flowers. **H** 20in (50cm), **S** 1ft (30cm).

◐ ◑ Z5–8

***Oenothera fruticosa* 'Fyrverkeri'**
Clump-forming perennial that from mid- to late summer bears spikes of fragrant, cup-shaped flowers. Has reddish stems and glossy, mid-green foliage. **H** and **S** 12–15in (30–38cm).

☼ ◊ Z4–8

Alchemilla conjuncta
Clump-forming perennial that has wavy, star-shaped leaves with pale margins. In midsummer, bears loose clusters of tiny, greenish-yellow flowers, with conspicuous, outer calyces, which may be dried for winter decoration. **H** and **S** 1ft (30cm).

☼ ◊ Z3–7

***Ranunculus constantinopolitanus* 'Plenus'**
Clump-forming perennial with divided, toothed leaves sometimes spotted gray and white. Neat, pomponlike, double, yellow flowers are borne in early summer. **H** 20in (50cm), **S** 1ft (30cm).

☼ ◑ Z7–9 ⓘ

***Helichrysum* 'Schwefellicht'**
Clump-forming perennial that bears silver-gray leaves and a mass of everlasting, fluffy, sulphur-yellow flowers from mid- to late summer. **H** 16–24in (40–60cm), **S** 1ft (30cm).

☼ ◊ Z10–11

Solidago* x *luteus
Clump-forming perennial. From midsummer onward, slender stems bear dense heads of bright creamy-yellow flowers above narrow, mid-green leaves. **H** 2ft (60cm), **S** 2½ft (75cm).

☼ ◊ Z5–8

***Geum* 'Lady Stratheden'**
Clump-forming perennial with lobed leaves and cup-shaped, double, bright yellow flowers with prominent, green stamens borne on slender, branching stems for a long period in summer.
H 1½–2ft (45–60cm), **S** 1½ft (45cm).

☼ 💧 Z5–9

Coreopsis verticillata
Bushy perennial with finely divided, dark green foliage and many tiny, star-shaped, golden flower heads borne throughout summer. Divide in spring. **H** 16–24in (40–60cm), **S** 1ft (30cm).

☼ 💧 Z4–9

***Ranunculus acris* 'Flore Pleno'**
(Double meadow buttercup)
Clump-forming perennial. Wiry stems with lobed and cut leaves act as a foil for rosetted, double, golden-yellow flowers in late spring and early summer.
H and **S** 1½–2ft (45–60cm).

☼ 💧 Z4–8 ⓘ

Potentilla megalantha
Clump-forming perennial with large, palmate, hairy, soft green leaves. Large, rich yellow flowers are produced in summer. **H** 8in (20cm), **S** 6in (15cm).

☼ 💧 Z5–8

Eriophyllum lanatum
Perennial forming low cushions of divided, silvery leaves. Daisylike, yellow flower heads are produced freely in summer, usually singly, on gray stems.
H and **S** 1ft (30cm).

☼ 💧 Z5–8

Buphthalmum salicifolium
(Yellow ox-eye)
Spreading perennial that produces daisylike, deep yellow flower heads singly on willowy stems throughout summer. May need staking. Divide regularly; spreads on rich soil.
H 2ft (60cm), **S** 3ft (90cm).

☼ 💧 Z5–8

Tropaeolum polyphyllum
Prostrate perennial with spurred, short, trumpet-shaped, rich yellow flowers, borne singly in summer above trailing, gray-green leaves and stems. May spread widely once established but good on a bank. **H** 2–3in (5–8cm), **S** 1ft (30cm) or more.

☼ 💧 Z8–11

Coreopsis lanceolata
Bushy perennial that in summer freely produces daisylike, bright yellow flower heads on branching stems. Lance-shaped leaves are borne on flower stems. Propagate by seed or division. **H** 1½ft (45cm), **S** 1ft (30cm).

☼ 💧 Z4–9

ORANGE

WHITE

Hieracium lanatum
Clump-forming perennial that produces mounds of broad, downy, gray leaves, above which dandelionlike, yellow flower heads are borne on wiry stems in summer. **H** 1–1½ft (30–45cm), **S** 1ft (30cm).

☼ ◊ Z5–8

***Calceolaria* 'John Innes'**
Vigorous, evergreen, clump-forming perennial that in spring–summer produces large, pouchlike, reddish-brown-spotted, deep yellow flowers, several to each stem. Has broadly ovate, basal, mid-green leaves. **H** 6–8in (15–20cm), **S** 10–12in (25–30cm).

☼ ◊ Z8–9

Inula ensifolia
Clump-forming perennial with small, lance-shaped to elliptic leaves, bearing many daisylike, yellow flower heads, singly on wiry stalks, in late summer. **H** and **S** 1ft (30cm).

☼ ◊ Z4–9

Inula royleana
Upright, clump-forming perennial with dark green stems and hairy leaves. Bears solitary, orange-yellow flower heads, 4–5in (10–12cm) across, from midsummer to early fall. **H** 1½–2ft (45–60cm), **S** 1½ft (45cm).

☼ ◊ Z4–8

***Gaillardia* x *grandiflora* 'Oranges and Lemons'**
Upright, rather open perennial that produces daisylike, yellow-tipped, peachy-orange flower heads all through summer. Has lance-shaped, toothed, hairy, mid-green leaves. Plants may be short-lived. Excellent in a border. **H** and **S** 2ft (60cm).

☼ ◊ Z6–9

***Libertia ixioides* 'Goldfinger'**
Evergreen, clump-forming rhizomatous perennial grown for its lance-shaped, golden-orange leaves, the color intensifying in winter. Bears short panicles of saucer-shaped, white flowers in summer. **H** and **S** 2ft (60cm).

☼ ◊ Z8–10

***Tricyrtis hirta* 'Alba'**
Upright, rhizomatous perennial that bears clusters of large, bell-shaped, spurred, white flowers, occasionally purple-spotted, in upper leaf axils of hairy, stem-clasping, dark green leaves during late summer and early fall. **H** 1½–2ft (45–60cm), **S** 1½ft (45cm).

☼ ◑ Z4–9

***Aspidistra elatior* 'Variegata'**
Evergreen, rhizomatous perennial with upright, narrow, glossy, dark green leaves which are longitudinally cream-striped. Occasionally produces inconspicuous, cream to purple flowers near soil level. **H** 2ft (60cm), **S** 1½ft (45cm).

◑ ◊ Z7–11

***Glechoma hederacea* 'Variegata'**
(Variegated ground ivy)
Evergreen, carpeting perennial that has small, heart-shaped leaves, with white marbling, on trailing stems. Bears insignificant flowers in summer. Spreads rapidly but useful for a container. **H** 6in (15cm), **S** indefinite.

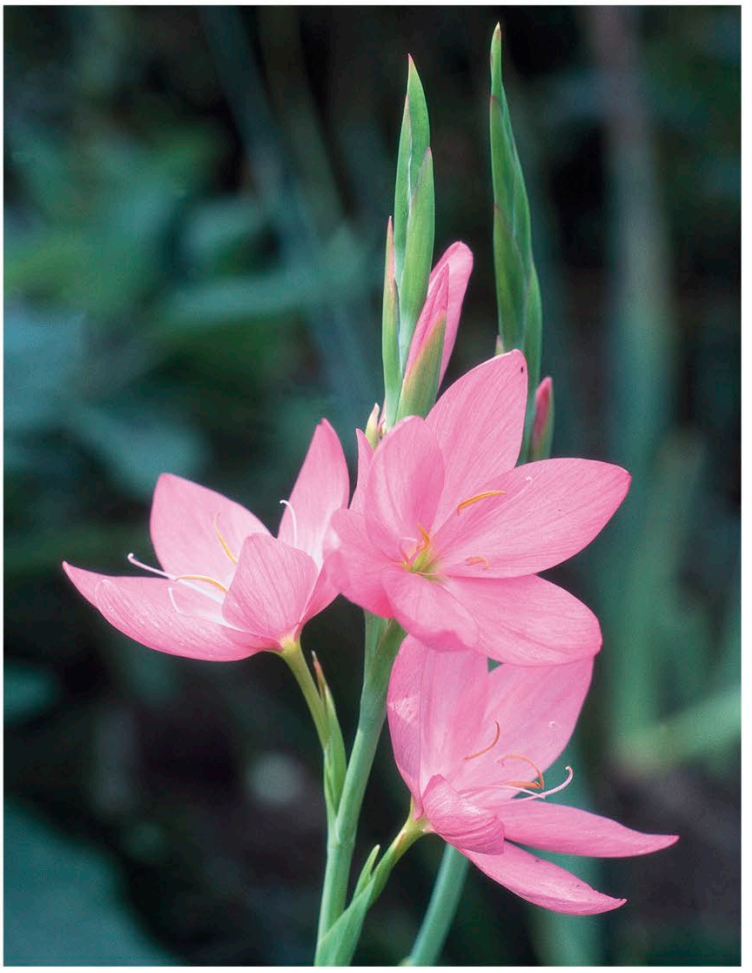
☼ ◊ Z6–9

Begonia grandis* subsp. *grandis
Tuberous begonia with ovate, toothed, often red- or bronze-tinged, olive-green leaves, up to 6in (15cm) long, and pendant fragrant, single, pink flowers, to 1¼in (3cm) across in late summer and fall. **H** 60cm (2ft), **S** 30cm (1ft).

☼ ◊ Z6–9

***Astrantia* 'Roma'**
Clump-forming perennial bearing masses of sterile, pink flower heads, which gradually fade to green, borne on slender stems from summer until the first frosts. **H** and **S** 2ft (60cm).

☼ ◊ Z4–7

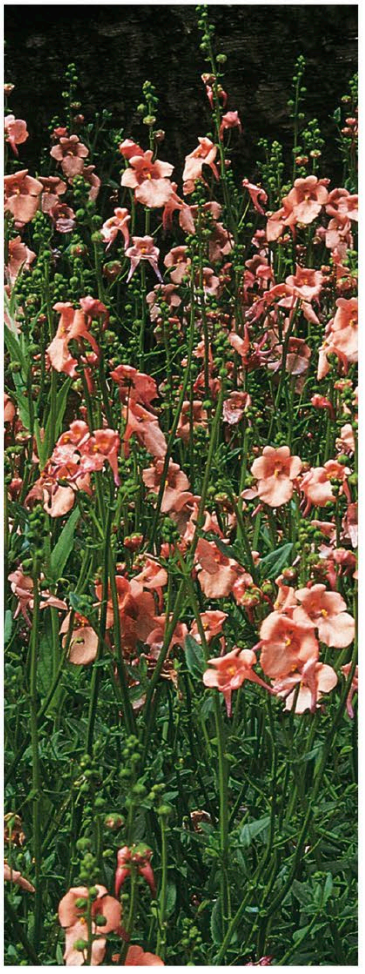


***Hesperanthus coccinea* 'Sunrise'**
Clump-forming, rhizomatous perennial that in early fall produces spikes of large, shallowly cup-shaped, pink flowers above grassy, mid-green foliage.
H 2ft (60cm), **S** 9–12in (23–30cm).

☼ ◊ Z7

Astrantia maxima
Clump-forming perennial that bears rose-pink flower heads during summer–fall. **H** 2ft (60cm), **S** 1ft (30cm).

☼ ◊ Z5–8



***Diascia barberae* 'Blackthorn Apricot'**
Mat-forming perennial with narrowly heart-shaped, tapering leaves. From summer to fall, produces loose racemes of apricot-pink flowers with small, narrow "windows" and almost straight, downward-pointing spurs. **H** 10in (25cm), **S** to 20in (50cm).

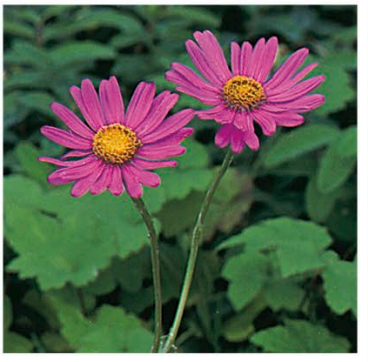
☼ ◊ Z8–9

Begonia taliensis
Erect, tuberous perennial with pointed, ovate, light green leaves marbled silver and purple-brown. Produces many small, single, shell-pink flowers in late fall. **H** 20in (50cm), **S** 14in (35cm). Min. 50°F (10°C).

☼ ◊ Z7–11

***Hylotelephium spectabile* Brilliant Group 'Brilliant'** (Ice-plant)
Clump-forming perennial that, from late summer to fall, produces flat heads of bright rose-pink flowers. These are borne over a mass of fleshy, gray-green leaves and attract butterflies.
H and **S** 1–1½ft (30–45cm).

☼ ◊ Z4–9 ⓘ



Senecio pulcher
Perennial with leathery, hairy, dark green leaves. In summer–fall, produces handsome, daisylike, yellow-centered, bright purplish-pink flower heads.
H 1½–2ft (45–60cm), **S** 20in (50cm).

☼ ◊ Z11–15 ⓘ

RED

***Tellima grandiflora* Rubra Group**
Semievergreen, clump-forming perennial with a mass of hairy, basal, reddish-purple leaves, underlaid dark green. In late spring, erect stems bear spikes of bell-shaped, pinkish-cream flowers. **H** and **S** 2ft (60cm).

☀ ◊ Z4–8

***Hesperanthus coccinea* 'Major'**
Rhizomatous perennial with long, narrow, grasslike leaves. Gladioluslike spikes of cup-shaped, bright crimson flowers are borne in fall. **H** 2ft (60cm) or more, **S** 1ft (30cm) or more.

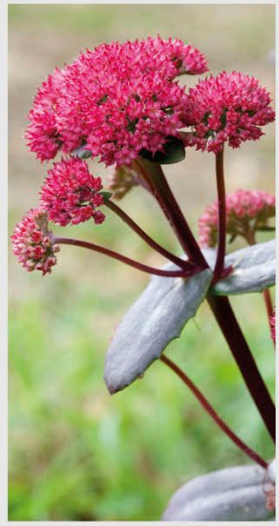
☼ ◊ Z7–9

Cautleya spicata
Upright perennial that in summer and early fall bears spikes of light orange or soft yellow flowers in maroon-red bracts. Has handsome, long, mid-green leaves. Needs a sheltered site and rich, deep soil. **H** 2ft (60cm), **S** 20in (50cm).

☼ ◊ Z7–9

HYLOTELEPHIUMS

With fleshy, drought-resistant foliage and heads of tiny, star-shaped flowers from summer to fall, hylotelephiums (previously included in the genus *Sedum*) are useful perennials for herbaceous borders and gravel gardens. Their nectar-rich blooms also make them a good choice for wildlife and naturalistic schemes. The flowers of the taller herbaceous plants are mostly in shades of pink and red, although white and yellow blooms are also available. Many have purple-tinged or variegated foliage, which extends their season of interest; the faded flowers and seedheads also provide a colorful display in late fall and winter. Plants thrive in full sun and free-draining soil, and bulk up quickly. Divide them regularly to prevent clumps from flopping open, and stake taller varieties. Protect young growth from slugs in spring and early summer.

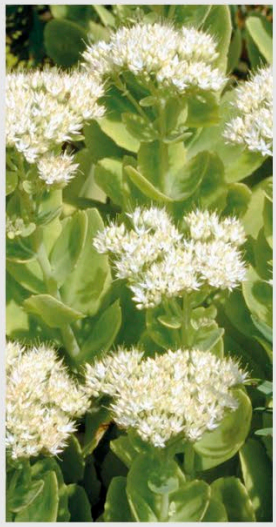


***H.* 'Red Cauli'**

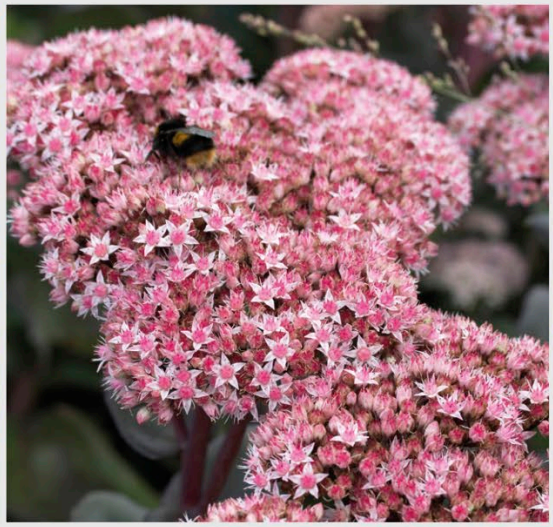
***H. erythrostictum* 'Mediovariegatum'**

***H.* 'Ruby Glow'**

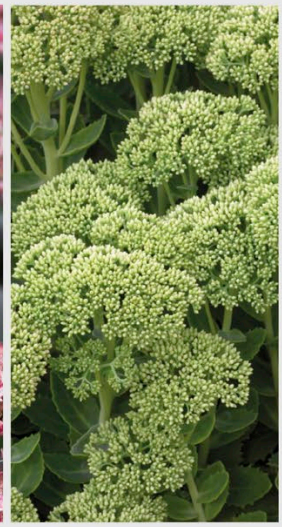
***H. telephium* Atropurpureum group 'Purple Emperor'**



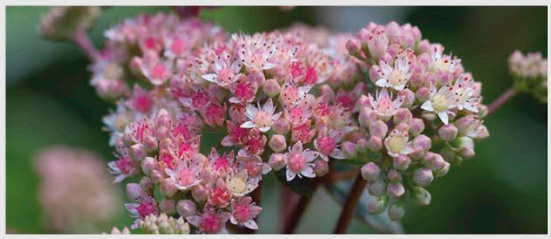
***H. spectabile* 'Iceberg'**



***H.* 'Matrona'**



***H. telephium* subsp. *maximum* 'Gooseberry Fool'**



***H. telephium* 'Strawberries and Cream'**

***H.* 'Herbstfreude'**

Tulbaghia violacea
Vigorous, semievergreen, clump-forming perennial that in summer–fall bears umbels of lilac-purple or lilac-pink flowers above a mass of narrow, glaucous, blue-gray leaves. **H** 45–60cm (1½–2ft), **S** 30cm (1ft).

☼ 💧 Z7–10

Liriope muscari
Evergreen, spreading perennial that, in fall, produces spikes of thickly clustered, rounded-bell-shaped, lavender or purple-blue flowers among narrow, glossy, dark green leaves.
H 30cm (1ft), **S** 45cm (1½ft).

☼ 💧 Z6–10

***Physostegia virginiana* 'Vivid'**
(Obedient plant)
Erect, compact perennial that, in late summer and early fall, bears spikes of tubular, dark lilac-pink flowers that can be placed in postion. Has toothed, mid-green leaves. **H** and **S** 1–2ft (30–60cm).

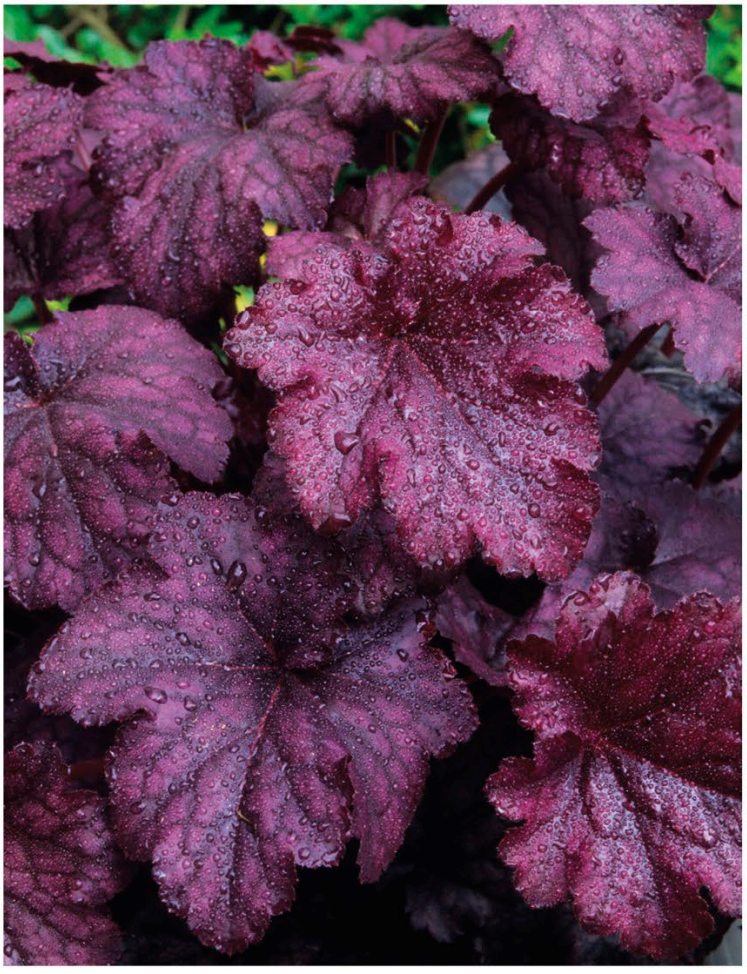
☼ 💧 Z2–8

Bergenia purpurascens
Evergreen, clump-forming perennial with ovate to spoon-shaped, flat, dark green leaves turning to beetroot-red in late fall. In spring bears racemes of open cup-shaped rich red flowers.
H 16in (40cm), **S** 2ft (60cm) or more.

☼ 💧 Z3–8

***Ophiopogon planiscapus* 'Nigrescens'**
Evergreen, spreading, clump-forming perennial, grown for its distinctive, grasslike, black leaves. Racemes of lilac flowers in summer are followed by black fruits. **H** 9in (23cm), **S** 1ft (30cm).

☼ 💧 Z6–11



***Heuchera* 'Plum Pudding'**
Evergreen, clump-forming perennial with rounded, deeply lobed, silvery-purple leaves. Long sprays of tiny, bell-shaped, pinkish flowers are borne in summer. Rejuvenate regularly to keep it healthy. A good foil for other plants.
H 20in (50cm), **S** 1ft (30cm).

◑ 💧 Z3–8

***Agastache* 'Black Adder'**
Upright perennial with whorled spires of smoky, purple-blue flowers from early summer to mid-fall, above ovate, pointed, toothed, aromatic, mid-green leaves. Good for attracting insects.
H 60cm (2ft), **S** 45cm (1½ft).

☼ 💧 Z8–11

***Geranium* 'Orion'**
Deciduous, clump-forming perennial producing masses of large, shallowly cup-shaped, violet-blue flowers from early summer until mid-fall. Has deeply lobed, mid-green basal leaves, each divided to the base into 7 sections.
H and **S** 20in (50cm).

☼ 💧 Z5–8

WHITE

***Helleborus niger* 'Potter's Wheel'**
Evergreen, clump-forming perennial with divided, deep green leaves and cup-shaped, nodding, pure white flowers, with overlapping petals and green "eyes," borne in winter or early spring. **H** and **S** 1ft (30cm).

☀ 💧 Z4–8 ⓘ

***Helleborus niger* 'HGC Josef Lemper'**
Evergreen, clump-forming, upright perennial with divided, rich, dark green leaves. Slightly fragrant, rounded, pure white flowers, with overlapping petals, are borne on sturdy stems from mid-fall to late winter. **H** to 1ft (30cm), **S** 1½ft (45cm).

☀ 💧 Z4–8 ⓘ

Helleborus* x *nigercors
Evergreen, clump-forming perennial with matte green leaves, to 14in (35cm) long with 3–5 broad, evenly toothed segments. In mid-winter–early spring, bears branched clusters of 10–20 saucer-shaped, green-tinted, cream or white flowers. **H** 16in (40cm), **S** 20in (50cm).

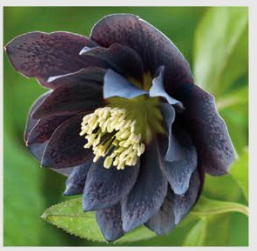
☀ 💧 Z4–9 ⓘ

LENTEN ROSES

Helleborus x *hybridus* (Lenten rose) cultivars are the hybrids between *H. orientalis* and other species. They flower in winter and spring, and are so varied that they're often sold by description or collection, rather than as named varieties. Their single or double flowers last for a few months, and open in a range of whites, yellows, pinks, and purples, often spotted or with darker edges. Most are evergreen, with large, toothed, divided leaves, and prefer moist, neutral to alkaline soil, but need protection from strong, winter winds. They will naturally hybridize and self-seed, and it's worth allowing your own seedlings to develop.

Harvington hybrids
[single, white] ⓘ

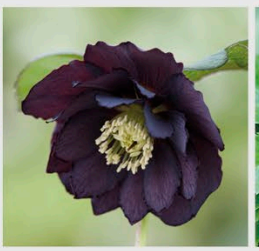
[single, red] ⓘ



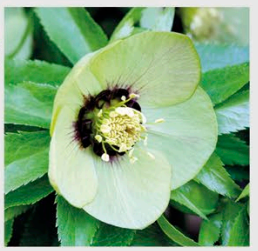
[double, slate] ⓘ

Bradfield hybrids
[double, apricot with spots] ⓘ

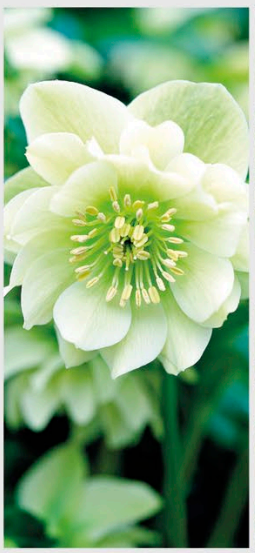
[double, plum] ⓘ



Ashwood Garden hybrids
[double, black] ⓘ

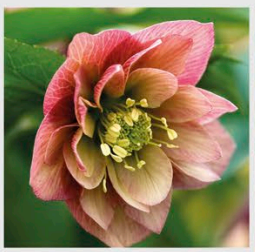


[single, green] ⓘ



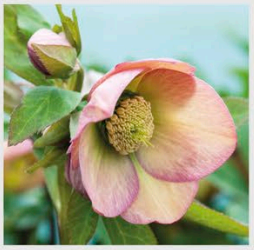
[double, white] ⓘ

[double, white with spots] ⓘ



Harvington hybrids
[double, apricot] ⓘ

[single, white with spots] ⓘ



[single, apricot] ⓘ

Ashwood Garden hybrids [double, pink] ⓘ

[single, yellow] ⓘ

[single, yellow with spots] ⓘ

HEUCHERA AND X HEUCHERELLA

Once regarded as a useful cottage garden, groundcovering perennial, grown for its sprays of red flowers and evergreen foliage, the selections of *Heuchera* bred in recent years have transformed this humble plant into a horticultural superstar. The leaves come in many colors, from near black and purple, to pink, peach, and yellow-green, and plants are ideal for containers as well as borders. Selections of x *Heucherella*, a cross between *Heuchera* and *Tiarella*, are smaller and more dainty. Plant all types in moist but well-drained soil and partial shade, but site brighter-leaved cultivars in a sunnier position. Most plants should be split and replanted every few years to prevent the crown from becoming woody and to keep them in good health.

Heuchera 'Ginger Ale'

Heuchera CRÈME BRÛLÉE ('Tnheu041')

Heuchera 'Midnight Rose'

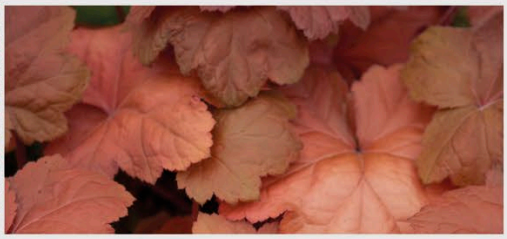
Heuchera 'Chocolate Ruffles'

Heuchera sanguinea 'Snow Storm'

Heuchera 'Pewter Moon'

Heuchera 'Blackbird'

Heuchera 'Purple Petticoats'



Heuchera 'Southern Comfort'

Heuchera 'Ebony and Ivory'

Heuchera 'Silver Scrolls'

Heuchera 'Green Spice'

Heuchera 'Tiramisu'

Heuchera 'Peach Flambé'

Heuchera 'Can-can'

Heuchera 'Beauty Colour'

x *Heucherella tiarelloides* 'imono'

Heuchera 'Peppermint Spice'

Heuchera 'Lime Rickey'

x *Heucherella tiarelloides* 'Stoplight'

Heuchera 'Cinnabar Silver'

Heuchera 'Amber Waves'

Heuchera 'Georgia Peach'

Ophiopogon japonicus
Evergreen, clump or mat-forming perennial with grasslike, glossy, dark green foliage. Spikes of lilac flowers in late summer are followed by blue-black berries. **H** 1ft (30cm), **S** indefinite

☼ ◊ Z7–10

Helleborus* x *sternii
'Boughton Beauty'
Evergreen, clump-forming perennial with purple-pink stems and divided, veined, mid-green leaves. Cup-shaped, pink-purple flowers, with green insides, are borne in terminal clusters in winter–early spring. **H** and **S** 20–24in (50–60cm).

☼ ◑ Z5–8 ⓘ

Helleborus foetidus
(Stinking hellebore)
Evergreen, clump-forming perennial with deeply divided, dark green leaves and, in late winter and early spring, panicles of cup-shaped, red-margined, pale green flowers. **H** and **S** 1½ft (45cm).

☼ ◊ Z6–9 ⓘ

***Helleborus foetidus* Wester Flisk Group**
Evergreen, semiwoody perennial with small, cup-shaped, purple-rimmed pale green flowers, borne on floppy, red-green stems in winter and spring. Has red-stalked, dark gray-green leaves divided into slender, slightly toothed leaflets. **H** 2–3ft (60–90cm), **S** 1½ft (45cm).

☼ ◑ Z6–9 ⓘ

***Dianella caerulea* CASSA BLUE ('Dbb03')**
Evergreen, tuft-forming perennial with narrowly lance-shaped, upright, dusky-blue leaves arising from a slowly creeping rootstock. Star-shaped, blue flowers in panicles in spring are followed by blue berries. **H** 20in (50cm), **S** 8in (20cm).

☼ ◊ Z9–10

Helleborus odorus
Semievergreen, clump-forming perennial with deeply divided, deep green basal leaves, hairy beneath, with 5 central leaflets. From early winter–early spring bears clusters of 3–5 fragrant, saucer-shaped, bright green to yellow-green flowers. **H** and **S** to 1ft (30cm).

☼ ◑ Z4–8 ⓘ

Soleirolia soleirolii
(Baby's tears, Mind-your-own-business)
Usually evergreen, invasive, prostrate perennial with small, round, vivid green leaves that form a carpet. May choke other plants if not controlled. **H** 2in (5cm), **S** indefinite.

☼ ◑ Z10–15

Helleborus cyclophyllus
Clump-forming perennial with palmate, deeply divided, bright green leaves. In early spring produces shallowly cup-shaped, yellow-green flowers with prominent, yellowish-white stamens. **H** 2ft (60cm), **S** 1½ft (45cm).

☼ ◑ Z6–9 ⓘ

WHITE

Pleioblastus variegatus
(Dwarf white-stripe bamboo)
Evergreen, slow-spreading bamboo with narrow, slightly downy, white-striped leaves. Stems are branched near the base. **H** 30in (80cm), **S** indefinite.

☼ ◊ Z6–11

Sasa veitchii
Evergreen, slow-spreading bamboo. Leaves, 10in (25cm) long, soon develop white edges. Stems, often purple, produce a single branch at each node. White powder appears beneath nodes. **H** to 5ft (1.5m), **S** indefinite.

☼ ◊ Z6–15

Lagurus ovatus (Hare's-tail grass)
Tuft-forming, annual grass that, in early summer, bears dense, egg-shaped, soft panicles of white flower spikes, with golden stamens, lasting well into fall. Leaves are long, narrow, and flat. Self seeds readily. **H** 1½ft (45cm), **S** 6in (15cm).

☼ ◊ Z8–11

***Cortaderia selloana* 'Sunningdale Silver'**
Evergreen, clump-forming, perennial grass with narrow, sharp-edged, recurved leaves, 5ft (1.5m) long. Bears long-lasting, feathery panicles of creamy-white spikelets in late summer. **H** 7ft (2.1m), **S** 4ft (1.2m).

☼ ◊ Z7–11

***Miscanthus sinensis* 'Zebrinus'**
Herbaceous, clump-forming, perennial grass. Leaves, hairy beneath, have transverse, yellowish-white ring markings. May produce awned, hairy, white spikelets in fan-shaped panicles in fall. **H** 4ft (1.2m), **S** 1½ft (45cm).

☼ ◊ Z6–9

Luzula nivea (Snowy woodrush)
Evergreen, slow-spreading, perennial rush with fairly dense clusters of shining, white flower spikes in early summer. Leaves are edged with white hairs. **H** 2ft (60cm), **S** 1½–2ft (45–60cm).

◐ ◊ Z4–9

Cortaderia richardii
Evergreen, clump-forming, perennial grass with bladelike, sharply edged, upright, olive-green leaves. In summer, produces plumelike, 1-sided, parchment-colored panicles on tall stems. **H** 8ft (2.5m), **S** 3ft (1m).

☼ ◊ Z7–10

Calamagrostis brachytricha
Herbaceous, clump-forming, perennial grass with linear, arching, gray-green leaves. In late summer, has tall erect stems bearing slender, gray-green inflorescences in narrow panicles, which last into winter, turning straw colored. **H** 4½ft (1.4m), **S** 20in (50cm).

◐ ◆ Z4–9

Miscanthus sinensis
'Yakushima Dwarf'
Compact, herbaceous, clump-forming, perennial grass with fine, arching, silvery-green leaves borne on short, upright stems. In late summer, produces plumelike panicles of long-lasting, gray-white spikelets. **H** 3ft (1m), **S** 2ft (60cm).

☼ 💧Z6–9

***Cortaderia selloana* 'Silver Comet'**
Evergreen, clump-forming, perennial grass with very narrow, sharp-edged, recurved leaves, 3ft (1m) long, that have silver margins. Carries plumelike panicles of spikelets from late summer. **H** 4–5ft (1.2–1.5m), **S** 3ft (1m).

☼ 💧Z7–11

Miscanthus sinensis
var. *condensatus* 'Cosmopolitan'
Herbaceous, clump-forming, perennial grass with white-striped leaves borne on upright, stout stems. Plumelike panicles of silver-white spikelets appear from late summer. Dried stems remain attractive into winter. **H** 6ft (2m), **S** 32in (80cm).

☼ 💧Z6–9

Chionochloa rubra
Evergreen, tussock-forming, perennial grass with linear, arching, tightly inrolled, reddish-green leaves. In summer, produces panicles of dainty, bronze-colored spikelets amid the leaves. Makes a superb potted specimen. **H** and **S** 28in (70cm).

☼ 💧Z8–11

***Eragrostis curvula* 'Totnes Burgundy'**
Herbaceous, densely tufted, perennial grass with narrowly linear, arching, dark green leaves, which turn dark burgundy-red from the tips downward. Nodding panicles of brownish spikelets are borne in summer. **H** 3ft (90cm), **S** 2ft (60cm).

☼ 💧Z9–11

***Imperata cylindrica* 'Rubra'**
Herbaceous, clump-forming, perennial grass. Linear, upright, bright green leaves turn red in late summer and fall, dying down in winter. Narrow, spikelike panicles of silvery-white spikelets are borne occasionally, in late summer. **H** and **S** 20in (50cm) or more.

☼ 💧Z5–9

RED

***Miscanthus sinensis* 'Flamingo'**
Herbaceous, clump-forming, perennial grass with narrow, arching, mid-green leaves borne on sturdy stems. In late summer, produces plumelike panicles of feathery, pinkish-red spikelets. These remain in good shape well into winter. **H** 5ft (1.5m), **S** 2ft (60cm).

☼ 💧Z6–9

***Miscanthus sinensis* 'Gracillimus'**
Herbaceous, clump-forming, perennial grass with very narrow leaves, hairy beneath, often turning bronze. May bear fan-shaped panicles of awned, hairy, white spikelets in early fall. **H** 4ft (1.2m), **S** 1½ft (45cm).

☼ 💧Z6–9

PURPLE

***Melica altissima* 'Atropurpurea'**
Evergreen, tuft-forming, perennial grass with broad leaves, short-haired beneath. Purple spikelets in narrow panicles, 4in (10cm) long, hang from the tops of stems during summer. **H** and **S** 2ft (60cm).

☼ 💧Z5–8

Phyllostachys nigra (Black bamboo)
Evergreen, clump-forming bamboo with greenish-brown stems that turn black in second season. Almost unmarked culm sheaths bear bristled auricles and mid-green leaves. Flowers are rarely produced. **H** 20–25ft (6–8m), **S** indefinite.

◐ 💧Z7–11

GREEN

***Molinia caerulea* subsp. *arundinacea* 'Transparent'**
Herbaceous, clump-forming, erect, perennial grass with linear, mid-green leaves that turn straw-yellow in fall. Tall, supple stems bear open panicles of purplish-green spikelets in summer. **H** 6ft (2m), **S** 2ft (60cm).

◐ 💧 pH Z5–9

Pennisetum villosum (Feather-top)
Herbaceous, tuft-forming, perennial grass with long-haired stems. In fall, bears panicles of creamy-pink spikelets, fading to pale brown, with long, bearded bristles. **H** to 3ft (1m), **S** 20in (50cm).

☼ 💧Z9–11

Stipa calamagrostis
Herbaceous or semievergreen, perennial grass forming tufts of linear, inrolled, bluish-green leaves, turning yellowish in fall. In summer, bears feathery, arching panicles of silvery-white spikelets, which age to reddish brown. **H** and **S** 2½ft (80cm).

☼ 💧Z7–10

Hordeum jubatum
(Foxtail barley, Squirrel tail grass)
Tufted, short-lived perennial or annual grass. In summer to early fall, bears flat, arching, feathery, plumelike flower spikes with silky awns. **H** 1–2ft (30–60cm), **S** 1ft (30cm).

☼ 💧Z4–8

***Thamnocalamus crassinodus* var. *spathiflorus* 'Kew Beauty'**
Evergreen or semievergreen, clump-forming bamboo with small, lance-shaped, grayish-green leaves on arching, blue-gray stems that age gradually to reddish-brown. Needs shelter. **H** 10ft (3m), **S** 5ft (1.5m).

◐ 💧Z9–11

Juncus effusus* f. *spiralis
(Corkscrew rush)
Evergreen, tuft-forming, perennial rush with leafless stems that twist and curl and are often prostrate. Fairly dense, greenish-brown flower panicles are produced in summer. **H** 3ft (1m), **S** 2ft (60cm).

☼ ◐Z6–9

Stipa gigantea (Golden oats)
Evergreen, tuft-forming, perennial grass with narrow leaves, 1½ft (45cm) or more long. In summer, produces elegant, open panicles of silvery spikelets, with long awns and dangling, golden anthers, which persist well into winter. **H** 8ft (2.5m), **S** 3ft (1m).

☼ 💧Z8–15

Phyllostachys nigra* f. *henonis
Evergreen, clump-forming bamboo with bristled auricles on culm sheaths and a profusion of leaves. **H** 30ft (10m), **S** 6–10ft (2–3m).

☼ 💧Z7–11

Phyllostachys viridiglaucescens
Evergreen, clump-forming bamboo with greenish-brown stems that arch at the base. Has white powder beneath nodes. **H** 20–25ft (6–8m), **S** indefinite.

☼ 💧Z7–11

Phyllostachys bambusoides
(Timber bamboo)
Evergreen, clump-forming bamboo with stout, erect, green stems. Bears leaf sheaths with prominent bristles, and large, broad, mid-green leaves. **H** 20–25ft (6–8m), **S** indefinite.

☼ 💧Z7–10

Pseudosasa japonica
(Arrow bamboo, Metake)
Evergreen, clump-forming bamboo that may run. Has long-persistent, roughly pubescent, brown sheaths and broad leaves, 14in (35cm) long. **H** 15ft (5m), **S** indefinite.

☼ 💧Z7–10

Shibataea kumasasa
Evergreen, clump-forming bamboo with stubby, side branches on greenish-brown stems. Leaves are 2–4in (5–10cm) long. **H** 3–5ft (1–1.5m), **S** 1ft (30cm).

☼ 💧Z6–15

Semiarundinaria fastuosa
(Narihira bamboo)
Evergreen, clump-forming bamboo with 6in (15cm) long leaves and short, tufted branches at each node. Culm sheaths open to reveal polished, purplish interiors. **H** 20ft (6m), **S** indefinite.

☼ 💧Z6–9

Ampelodesmos mauritanicus
Dense, evergreen, clump-forming, perennial grass with linear, gray-green leaves, to 3ft (1m) long, with dark green undersides. In summer, long-lasting one-sided panicles of purplish-green flowers are borne on upright, lofty stems. **H** 8ft (2.5m), **S** 3ft (1m).

☼ 💧Z8–10

Chimonobambusa tumidissinoda
Vigorous, evergreen, rhizomatous bamboo with curiously prominent, green stems, flared at each node. Lance-shaped, dark green leaves have a feathery look. May spread. **H** and **S** 16ft (5m) or more.

◑ 💧Z9–11

GREEN

Chasmanthium latifolium
Herbaceous, clump-forming, perennial grass with broadly lance-shaped, short-stemmed, light green leaves that turn pale beige in winter. In summer, produces open panicles of oatlike, arching, green spikelets, aging to beige. **H** 3ft (1m), **S** 2ft (60cm).

☀ 💧Z5–9

Helictotrichon sempervirens
(Blue oat grass)
Evergreen, tufted, perennial grass with stiff, silvery-blue leaves up to 1ft (30cm) or more long. Produces erect panicles of straw-colored flower spikes in summer. **H** 3ft (1m), **S** 2ft (60cm).

☀ 💧Z4–9

***Yushania anceps* 'Pitt White'**
Very vigorous, evergreen, rhizomatous, clump-forming bamboo with upright, shiny, dark green stems that arch with age. Produces almost weeping branches of narrowly lance-shaped, fresh green leaves, with purple-tinted stalks. **H** 30ft (10m), **S** indefinite.

☀ 💧Z8–13

Chusquea culeou (Chilean bamboo)
Slow-growing, evergreen, clump-forming bamboo. Bears long-lasting culm sheaths, shining white when young, at the swollen nodes of stout, solid stems. **H** to 15ft (5m), **S** 8ft (2.5m) or more.

☀ 💧Z8–11

***Luzula sylvatica* 'Hohe Tatra'**
Evergreen, mound-forming, perennial sedge with broadly linear, bright golden-yellow leaves turning yellowish-green in summer. Short stems bear open panicles of brown flowers in summer. **H** 16in (40cm), **S** 1ft (30cm).

☀ 💧Z4–9

YELLOW

Phyllostachys aurea
(Golden bamboo)
Vigorous, evergreen, clump-forming bamboo with upright, grooved, yellow-green stems and cup-shaped swellings beneath each node. Has narrowly lance-shaped, pointed, green leaves. **H** 20ft (6m), **S** 13ft (4m) or more.

☀ 💧Z7–11

***Carex oshimensis* 'Evergold'**
Evergreen, tuft-forming, perennial sedge with narrow, yellow-striped leaves, 8in (20cm) long. Solid, triangular stems may bear insignificant flower spikes in summer. **H** 8in (20cm), **S** 6–8in (15–20cm).

☀ 💧Z6–9

Stipa tenuissima
Deciduous, tuft-forming, perennial grass with narrowly linear, upright, tightly inrolled, bright green leaves. From early summer, bears plumelike panicles of silvery-green spikelets, turning to pale beige as seeds form. **H** 2ft (60cm), **S** 16in (40cm).

☀ 💧Z7–11

***Deschampsia cespitosa* 'Goldtau'**
Evergreen, tuft-forming, perennial grass with cloudlike panicles of tiny, golden-yellow spikelets in summer. Both spikelets and the linear, sharp-edged, dark green leaves turn golden in fall. **H** 28in (70cm), **S** 20in (50cm).

☼ ◑ pH Z5–9

***Alopecurus pratensis* 'Aureovariegatus'** (Golden foxtail)
Herbaceous, tuft-forming, perennial grass with yellow or yellowish-green-streaked leaves and dense flower spikes in summer. **H** and **S** 9–12in (23–30cm).

☼ Z5–8

***Spartina pectinata* 'Aureomarginata'**
Herbaceous, spreading, rhizomatous grass with long, arching, yellow-striped leaves, which turn orange-brown in late fall to winter. **H** to 6ft (2m), **S** indefinite.

☼ ◑ Z8–11

Anemanthele lessoniana
(Pheasant's tail grass)
Evergreen or semievergreen, tuft-forming, perennial grass with linear, olive-green leaves tinted orange. In summer, bears arching, open panicles of tiny, purplish-green spikelets. Has good winter color and form. **H** 20in (50cm), **S** 32in (80cm).

☼ Z5–9

Pleioblastus viridistriatus
Evergreen, slow-spreading bamboo with purple stems and broad, softly downy, bright yellow leaves with green stripes. **H** 1.5m (5ft), **S** indefinite.

☼ Z7–11

Phyllostachys vivax* f. *aureocaulis
Evergreen, clump-forming, slow-growing bamboo with bright lemon-yellow stems. Narrowly lance-shaped, dark green leaves make the perfect foil for the stems. **H** 20ft (6m), **S** 10ft (3m) or more.

☼ Z7–10

***Hakonechloa macra* 'Aureola'**
Slow-growing, herbaceous, shortly rhizomatous grass with purple stems and green-striped, yellow leaves that age to reddish-brown. Bears open panicles of reddish-brown flower spikes in early fall that last into winter. **H** 16in (40cm), **S** 1½–2ft (45–60cm).

☼ Z5–9

Carex flagellifera
Evergreen, tuft-forming, perennial sedge with grasslike, reddish-brown leaves, upright, then arching to the ground. Triangular stems bear insignificant, brown flower spikes in summer. Good for winter color. **H** 32in (80cm), **S** 2ft (60cm) or more.

☼ Z7–9

PURPLE

***Athyrium niponicum* var. *pictum* 'Burgundy Lace'**
Deciduous fern with a slow-creeping, reddish-brown rhizome and broadly triangular, divided, spreading fronds of metallic purplish-bronze with silver-gray tips and bright pink-purple veins. **H** 20in (50cm), **S** 16in (40cm).

☀◑ Z5–8

***Athyrium* 'Ghost'**
Deciduous fern producing lance-shaped, rather upright, silvery-white fronds, with contrasting, purplish-green veins, in spring. Coloration is most pronounced in spring. **H** 2ft (60cm), **S** 8in (20cm) or more.

☀◑ Z5–8

GREEN

***Polystichum setiferum* 'Pulcherrimum Bevis'**
Evergreen or semievergreen fern with broadly lance-shaped, daintily cut, sharp-edged fronds that are yellowish-green in spring and mature to a glossy, rich dark green. **H** 2ft (60cm), **S** 30in (75cm).

☀◑ Z6–9

Blechnum penna-marina
Fast-growing, evergreen, carpeting fern. Has narrow, ladderlike, dark green fronds, red-tinged when young. Outer, sterile fronds are spreading; inner, fertile ones erect. **H** 6–12in (15–30cm), **S** 12–18in (30–45cm).

☀◑ pH Z10–11

Dicksonia antarctica
(Australian tree fern)
Evergreen, treelike fern. Stout trunks are covered with brown fibers and crowned by spreading, somewhat arching, broadly lance-shaped, much-divided, palmlike fronds. **H** 30ft (10m) or more, **S** 12ft (4m).

☀◑ Z9–10

Asplenium trichomanes
(Maiden-hair spleenwort)
Semievergreen fern that has long, slender, tapering fronds with glossy, black, later brown, midribs bearing many rounded-oblong, bright green pinnae. Suitable for limestone soils. **H** 6in (15cm), **S** 6–12in (15–30cm).

☀ ◑ Z5–8

Thelypteris palustris
(Marsh buckler fern, Marsh fern)
Deciduous fern. Has strong, erect, lance-shaped, pale green fronds, with widely separated, deeply cut pinnae, produced from wiry, creeping, blackish rhizomes. Grows well beside a pool or stream. **H** 30in (75cm), **S** 1ft (30cm).

☀ ◑ Z5–8

Polystichum setiferum
Divisilobum Group
Evergreen or semievergreen fern. Broadly lance-shaped or ovate, soft-textured, much-divided, spreading fronds are clothed with white scales as they unfurl. **H** 2ft (60cm), **S** 1½ft (45cm).

☀ ◑ Z6–9

Cyrtomium falcatum
(Fishtail fern, Holly fern)
Evergreen fern. Fronds are lance-shaped and have hollylike, glossy, dark green pinnae; young fronds are often covered with whitish or brown scales. **H** 1–2ft (30–60cm), **S** 1–1½ft (30–45cm).

☀ ◑ Z6–11

Adiantum aleuticum
Semievergreen fern with a short root-stock. Has glossy, dark brown or blackish stems and dainty, divided, fingerlike fronds, with blue-green pinnae, that are more crowded than those of *A. pedatum*. Grows well in alkaline soils. **H** and **S** to 1½ft (45cm).

☀ ◑ Z3–8

Polypodium* x *mantoniae
'Cornubiense'
Evergreen fern with narrow, lance-shaped, divided, fresh green fronds; segments are further sub-divided to give an overall lacy effect. **H** and **S** 10–12in (25–30cm).

☀ ◑ Z5–9

Adiantum pedatum
(Northern maidenhair fern)
Semievergreen fern with a stout, creeping rootstock. Dainty, divided, fingerlike, mid-green fronds are produced on glossy, dark brown or blackish stems. **H** and **S** to 1½ft (45cm).

☀ ◑ pH Z3–8

Polystichum setiferum
Plumosodivisilobum Group
Evergreen fern that produces a "shuttlecock" of lance-shaped, divided fronds with segments narrowed toward the frond tips; lower pinnae often overlap. **H** 4ft (1.2m), **S** 3ft (1m).

☀ ◑ Z6–9

Polypodium vulgare
(Common polypody, Polypody)
Evergreen fern with narrow, lance-shaped, divided, herringbonelike, mid-green fronds, arising from creeping rhizomes covered with copper-brown scales. Suits a rock garden. **H** and **S** 10–12in (25–30cm).

☀ ◑ Z6–8

GREEN

Asplenium scolopendrium
(Hart's-tongue fern)
Evergreen fern with stocky rhizomes and tongue-shaped, leathery, bright green fronds. Good in alkaline soils. **H** 18–30in (45–75cm), **S** to 18in (45cm).

☀ ◑ Z6–8

***Asplenium scolopendrium* Crispum Group**
Evergreen, terrestrial fern with stocky, upright rhizomes and tongue-shaped, leathery, mid-green fronds with strongly wavy margins. Usually sterile. **H** and **S** 1ft (30cm) or more.

☀ ◑ Z5–9

Adiantum venustum
Deciduous fern with delicate, pale green fronds, tinged brown when young, consisting of many small, triangular pinnae, on glossy stems. **H** 9in (23cm), **S** 1ft (30cm).

◑ pH Z5–8

Blechnum chilense
Splendid evergreen fern with broadly lance-shaped, leathery, dark green fronds on upright, scaly brownish stems arising from a creeping rootstock. Eventually forms a large colony. **H** and **S** 3ft (1m).

◑ pH Z10–11

Polystichum tsussimense
Evergreen fern bearing broadly lance-shaped, rather leathery, dark green fronds with narrowly oblong, spiny toothed, pointed pinnae. Suitable for a shaded rock garden or alpine house. **H** 10in (25cm), **S** 8in (20cm).

☀ ◑ Z6–9

Dryopteris wallichiana
(Wallich's wood fern)
Deciduous, clump-forming or often solitary fern with an erect rhizome and a "shuttlecock" of lance-shaped, divided, bright yellow-green fronds, aging to dark green with scaly, brownish-black stems. **H** 3ft (90cm), **S** 1ft (30cm).

☀ ◑ Z5–7

Dryopteris erythrosora
(Japanese shield fern)
Usually evergreen, clump-forming fern. Produces broadly triangular, arching, shiny, coppery-red flushed, pinkish-green fronds that age to bronze and then to bright green. **H** 16in (40cm), **S** 1ft (30cm).

☀ ◑ Z5–9

Asplenium ceterach (Rusty-back fern)
Semievergreen fern with lance-shaped, leathery, dark green fronds divided into alternate, bluntly rounded lobes. Backs of young fronds are covered with silvery scales that mature to reddish-brown. **H** and **S** 6in (15cm).

◐ ◑ Z6–9

Cryptogramma crispa (Parsley fern)
Deciduous fern with broadly ovate to triangular, finely divided, bright pale green fronds that resemble parsley. In fall, fronds turn bright rusty-brown and persist during winter. **H** 6–9in (15–23cm), **S** 6–12in (15–30cm).

◐ ◑ pH Z5–8

Dryopteris filix-mas (Male fern)
Deciduous or semievergreen fern with "shuttlecocks" of elegantly arching, upright, broadly lance-shaped, mid-green fronds that arise from crowns of large, upright, brown-scaled rhizomes. **H** 4ft (1.2m), **S** 3ft (1m).

☀ ◑ Z4–8

Polystichum munitum
(Giant holly fern)
Evergreen fern with erect, leathery, lance-shaped, dark green fronds that consist of small, spiny-margined pinnae. **H** 4ft (1.2m), **S** 1ft (30cm).

◐ ◑ Z3–8

Polypodium cambricum
'Richard Kayse'
Evergreen fern with a slow-creeping rhizome and lance-shaped to triangular-ovate, lacy, bright green fronds. New fronds appear in late summer and die back in late spring. Sori are yellow in winter. **H** 1ft (30cm), **S** 8in (20cm).

☀ ◑ Z6–8

ANNUALS, BIENNIALS, AND BEDDING

Invaluable for their rapid growth, instant color, and relatively low cost, annuals and biennials are ideal gap fillers between newly planted trees and shrubs, as well as in perennial displays that might need reviving after the first flush of spring. They are also useful as bedding in formal schemes, such as parterres, and in containers of all types. An important ingredient in cottage gardens and wildflower meadows, they can help to shape informal schemes.

ANNUALS, BIENNIALS, AND BEDDING

Indispensable in pots, containers, and borders, many of these colorful plants flower from early summer to early fall, and some also provide beautiful foliage. Combine them with plants that bloom in winter and spring to brighten up your garden all year.

What are annuals and biennials?

Annuals are plants that grow, bloom, set seed, and die in a single growing season. Biennials complete their life cycle in two seasons: most are sown in late spring or summer and make leafy growth in the first year, then flower, set seed, and die in the next. Bedding plants usually refer to half-hardy or tender annuals that are traditionally used in summer flower schemes. Some plants in this category are technically perennials or even shrubs, but are referred to as annuals because they are used for just one season. Examples include pelargoniums, nemesias, and brachyscome, which are perennials, and marguerites (*Argyranthemum* species), and fuchsias, which are tender shrubs. Plants in this group are also sometimes described as "summer seasonals" and "spring seasonals."

BELOW Summer harmonies
Combine the shapes and colors of annuals for a balanced display. Begonias, heliotropes, silver-leaved senecio, and zinnias create a vibrant mix.

Growing annuals and biennials

Plants in this category can be grown from seeds, bought as young seedlings known as "plug" plants, or purchased as mature specimens ready to plant.

Sowing seeds is the most cost-effective option if you have a large space or lots of containers to fill; there are many half-hardy or frost-tender types that are very easy to grow in pots or trays on a windowsill or in a greenhouse, including petunias, French marigolds (*Tagetes*), and tobacco plants (*Nicotiana*). The seedlings should be hardened off for a few weeks in spring by placing them outside during the day and bringing them back under cover at night. Then plant them outside in late spring when all danger of frost has passed.

Hardy annuals are easier still, since they can be sown outside in spring where they are to flower. For earlier summer blooms, plants like love-in-a-mist (*Nigella*) and poppies (*Papaver rhoeas*) can be sown in early fall in free-draining soil. Sow your seeds in straight lines or curves, so that you can distinguish them from weed seedlings when they germinate.

For winter and spring color, most suitable plants, such as violas, are raised from seeds sown in summer. Alternatively, buy young plants in the fall.

Biennials can be grown from seeds or bought as plug plants in the summer before they bloom. Find a quiet corner of the garden to sow your seeds, as they will be there for many months and may be swamped by other plants if sown directly into a summer bed or border.

ABOVE Shades of pink
Create an elegant basket using shades of pink. Dark cherry pink petunias, pale busy Lizzies, starry isotomas, and raspberry-colored diascias combine beautifully.

Ornamental features

Annuals and biennials are available in a wide range of shapes and sizes, from low hummock-forming cultivars of *Ageratum houstonianum* and trailing petunias to the tall spires of foxgloves (*Digitalis purpurea*) and dramatic Scotch thistles (*Onopordum acanthium*) that shoot up to 6ft (1.8m).

Flowers offer a vast choice of colors and forms, including scented types such as heliotropes (*Heliotropium arborescens*), tobacco plants (*Nicotiana* species), and the chocolate-scented *Cosmos atrosanguineus*. Colors extend from the opalescent white of *Omphaloides linifolia* to the vibrant scarlets of pelargoniums, bright orange and yellow Californian poppies (*Eschscholzia californica*), and intense magentas and purples of petunias. For more subtle pastel schemes, opt for plants such as *Anoda cristata*, blue *Silene coeli-rosa*, baby blue eyes (*Nemophila*

menziesii), and the pale green blooms of *Nicotiana langsdorffii*.

To provide a foil for the flowers, consider the wealth of foliage plants available. These include the vast variety of coleus (*Solenostemon*) with their multicolored leaves, the bright silver foliage of *Senecio cineraria*, and the dark purple-lobed leaves of *Ipomoea batatus* 'Blackie'.

Design options

Annuals and biennials provide an extended season of color in formal schemes, and are particularly useful for filling beds and gaps in borders. In addition, they can be used to edge flower beds and borders or to create Victorian-style bedding schemes, which are enjoying renewed popularity.

Hardy annuals, such as cornflowers (*Centaurea*), poppies, and California bluebell (*Phacelia campanularia*) are ideal for naturalistic or wildlife schemes. For mixed schemes, grow them in containers like half-hardy annuals or buy plug plants and set them between more permanent perennials and shrubs (many annual seeds will not germinate in these situations because of competition from neighboring plants).

Annuals and bedding plants make striking features in seasonal containers, window boxes, and hanging baskets. Use feature plants, such as fuchsias, zinnias, and begonias in the center, together with trailers like *Helichrysum petiolatum* or trailing petunias to soften the edges of your pots. In fall and winter displays, combine dwarf conifers, such as *Juniperus communis* 'Compressa', with dainty violas.

Year-round color

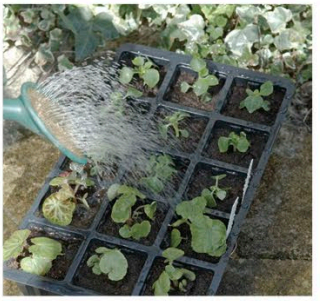
The long flowering season of annuals and biennials provides months of color. Violas flower in winter but put on their best show in spring, when they are joined by forget-me-nots (*Myosotis*) and wallflowers (*Erysimum cheiri*), which look particularly beautiful when combined with bulbs such as daffodils and tulips. Follow these with any of the summer annuals and biennials, such as foxgloves (*Digitalis*). Busy lizzies (*Impatiens*) are particularly useful for shady sites. Fall stars include Chinese asters (*Callistephus chinensis*) and, in warm climes, the fruits of *Solanum pseudocapsicum* will brighten a winter's day. In cold areas, bring these bushy evergreens indoors.

POTTING PLUG PLANTS

If you do not have the space or time to sow seeds, look for seedlings, known as "plugs." Many popular plants, including busy Lizzies, begonias, lobelias, and fuchsias are available in this form, with the largest choice available from mail-order specialists. Pot small plug plants and grow them indoors until the frosts have passed.

1 Remove plugs
Water the plugs as soon as they arrive. Fill large modular trays or 3in (8cm) pots with good-quality potting mix designed for seedlings. Use the blunt end of a pencil to gently push them out of their original containers from the bottom.

2 Plant up modules
Make a hole in the compost with your finger or the pencil and insert a plug into each module or pot. Firm the compost around the plants with your fingers, ensuring there are no air gaps, and taking care not to compact the soil or damage the roots.



3 Water the plants
Using a watering can with a fine spray, water the plugs well. Keep them in a cool, light, frost-free place, and keep them well watered. Harden off the young plants before planting them outside after the risk of frost has passed.

SOWING SEEDS IN TRAYS

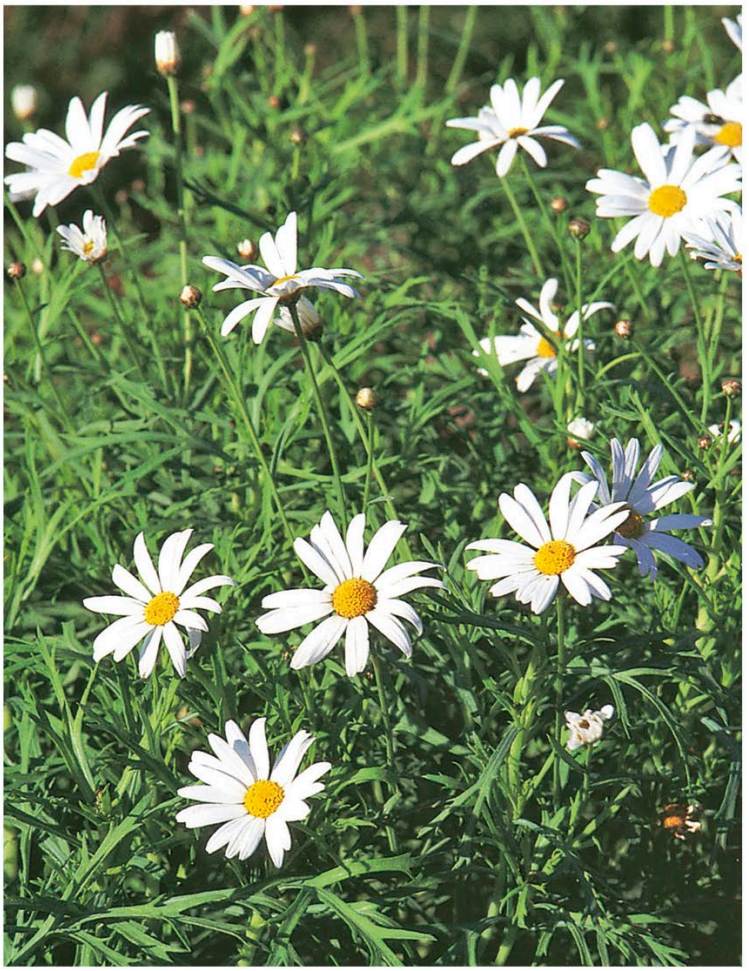
Growing summer bedding plants from seeds can be very cost-effective, especially if you have several containers or beds to fill. Sowing seed in trays indoors is the ideal option for half-hardy or frost-tender plants, allowing you to start them off early in spring so that plants are mature and ready to flower when planted outside. Small seeds, such as petunias, are difficult to space evenly in trays; seedlings will need to be transplanted when they have a few leaves to larger trays, pots, or modules. Seed specialists offer a huge variety of plants via mail order or online.

Pot of seed-sown annuals

1 Fill seed trays
Using good-quality seed compost, fill some clean seed trays to within 1in (2cm) of the top. Gently press another seed tray on top to level out and firm the surface. Using a watering can with a fine spray, water the compost and allow to drain.

2 Sow seeds
Pour some seeds into your hand and carefully space them out on the compost surface. Sprinkle sieved compost over the seeds, and cover to the depth specified on the seed packet. Also check the seeds' required germination temperature.

3 Cover and keep moist
Label the seed tray, and cover with a lid or a clear plastic bag. Place in a light spot. Keep the soil moist,and remove the lid or plastic bag as soon as the seedlings emerge. Harden them off before planting the seedlings outside.



Argyranthemum frutescens
(Marguerite)
Evergreen, woody-based, bushy perennial that bears many daisylike, white, yellow or pink flower heads throughout summer. Attractive leaves are fresh green. **H** and **S** 28in (70cm).

☼ ◊ Z10–11

Catharanthus roseus
(Rose periwinkle)
Evergreen, spreading shrub, becoming untidy with age. Has white to rose-pink flowers in spring to fall, also in winter in warm areas. **H** and **S** 1–2ft (30–60cm). Min. 41–5ºF (5–7ºC).

☼ ◊ Z10–11

Euphorbia hypericifolia
DIAMOND FROST ('Inneuphe')
Bushy perennial, grown as an annual, with slender, repeatedly branched stems and elliptical, grayish-green leaves. Bears cloudlike flower heads of small, white florets in summer–fall. **H** 7in (18cm), **S** 16in (40cm). Min. 41ºF (5ºC).

☼ ◑ Z10–11 ⓘ

***Chaenostoma cordatum* 'Snowflake'**
Evergreen, prostrate to trailing perennial with hairy stems and small, rounded, scalloped, pale to mid-green leaves. Bears 5-lobed, white flowers, ¾in (2cm) across, throughout summer. Excellent in a hanging basket or trailing from a tub. **H** 4–8in (10–20cm), **S** 8–12in (20–30cm).

☼ ◑ Z11–11

***Lobularia maritima* 'Snow Crystals'**
Ground-hugging, mound-forming annual with narrow, mid-green leaves and heads of unusually large, fragrant, 4-petaled, white flowers in summer–fall. Neater than older types. **H** 6–10in (15–25cm), **S** 12–14in (30–35cm).

☼ ◑ Z10–11

***Plectranthus forsteri* 'Marginatus'**
Evergreen, bushy perennial. Ovate leaves, to 2½in (6cm) long, are grayish-green with scalloped, white margins. Irregularly has tubular, white to pale mauve flowers. **H** 10in (25cm), **S** to 3ft (1m). Min. 50ºF (10ºC).

☼ ◑ Z8–11

***Osteospermum* 'Whirlygig'**
Evergreen, clump-forming, semi-woody perennial of lax habit that produces bluish-white flower heads singly, but in great profusion, during summer. Leaves are gray-green. **H** and **S** 2ft (60cm).

☼ ◊ Z10–11

***Dahlia* 'Gallery Art Fair'**
Well-branched, small-flowered decorative dahlia, grown as an annual. Produces a prolific display of white flowers, 4in (10cm) across, with greenish-yellow centers, in summer–fall. Ideal in a container. **H** 12–14in (30–35cm), **S** 10–12in (25–30cm).

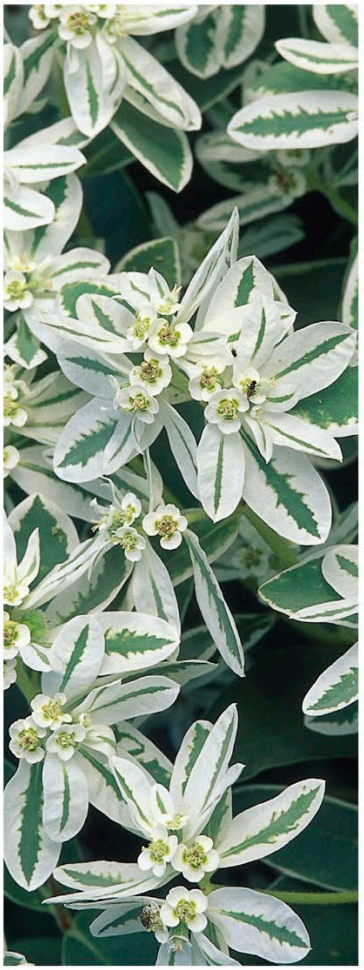
☼ ◑ Z9–11

***Zinnia marylandica* Zahara Series 'Zahara Starlight Rose'**
Mound-forming annual with ovate, mid-green leaves. In summer–fall produces bright, double, daisylike, red-and-white, bicolored flower heads. Is drought tolerant. **H** and **S** 12–18in (30–45cm). Min. 41ºF (5ºC).

☼ ◑ Z9–11

Digitalis purpurea* f. *albiflora
Slow-growing, short-lived perennial, grown as a biennial. Has a rosette of large, pointed-ovate leaves and erect stems carrying tubular, white flowers in summer. **H** 3–5ft (1–1.5m), **S** 12–18in (30–45cm).

☀ ◐ Z4–8 ⓘ



Euphorbia marginata (Snow-in-summer, Snow-on-the-mountain)
Moderately fast-growing, upright, bushy annual. Has pointed-ovate, bright green leaves; upper leaves are white-margined. Broad, petallike, white bracts surround tiny flowers in summer. **H** 2ft (60cm), **S** 1ft (30cm).

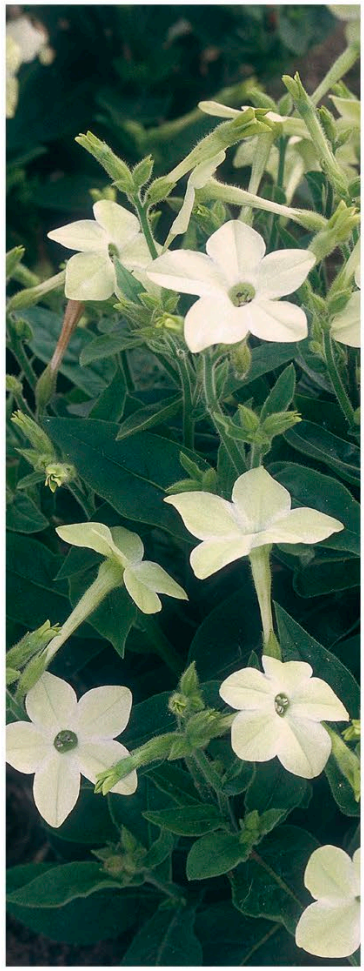
☀ Z2–11 ⓘ

Iberis amara
Fast-growing, erect, bushy annual with lance-shaped, mid-green leaves. Has flattish heads of small, scented, 4-petaled, white flowers in summer. **H** 1ft (30cm), **S** 6in (15cm).

☀ Z11

Eustoma grandiflorum
Slow-growing, upright annual with lance-shaped, deep green leaves. Poppylike, pink, purple, blue or white flowers, 2in (5cm) wide, are carried in summer. **H** 2ft (60cm), **S** 1ft (30cm). Min. 41–45°F (5–7°C).

☀ Z8–11



Nicotiana* x *sanderae
Domino Series [white]
Bushy annual or short-lived perennial with ovate, mid-green leaves. In summer and early fall produces a long display of upward-facing, long-tubed, salverform flowers in a range of colors. **H** and **S** 12–18in (30–45cm).

☀ Z10–11 ⓘ

Dimorphotheca pluvialis (Rain daisy)
Branching annual with ovate, hairy, deep green leaves. In summer, has small, daisylike flower heads, the rays purple beneath and white above, with brownish-purple centers. **H** 8–12in (20–30cm), **S** 6in (15cm).

☀ Z9–11

Gypsophila elegans
Fast-growing, erect, bushy annual. Has lance-shaped, grayish-green leaves and clouds of tiny, white flowers in branching heads from summer to early fall. **H** 2ft (60cm), **S** 1ft (30cm) or more.

☀ Z5–9

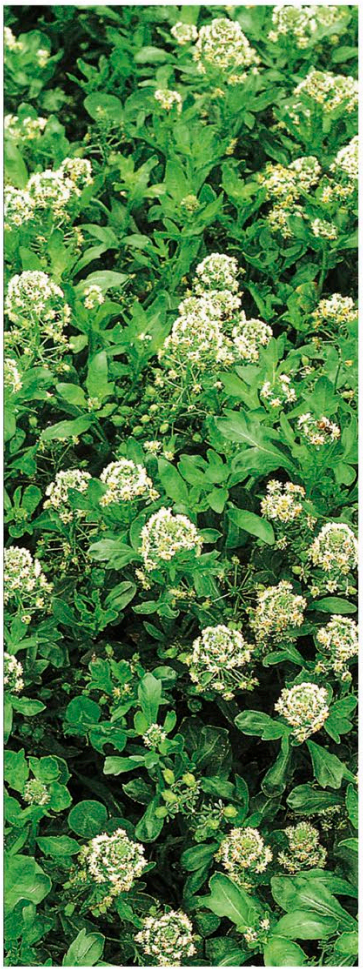
Nemophila maculata
(Five-spot baby)
Fast-growing, spreading annual with lobed leaves. Small, bowl-shaped, white flowers with purple-tipped petals are carried in summer. **H** and **S** 15cm (6in).

☀ Z9–10

Omphalodes linifolia
(Venus's navelwort)
Fairly fast-growing, slender, erect annual with lance-shaped, gray-green leaves. Tiny, slightly scented, rounded, white flowers, rarely tinged blue, are carried in summer. **H** 6–12in (15–30cm), **S** 6in (15cm).

☀ Z6–10

WHITE

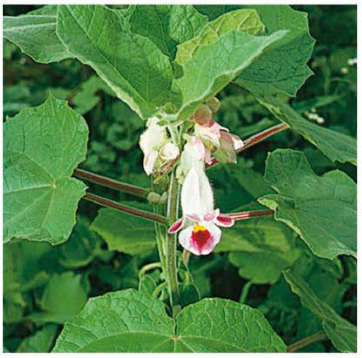


Reseda odorata (Mignonette)
Moderately fast-growing, erect, branching annual with ovate leaves. Conical heads of small, very fragrant, somewhat star-shaped, white flowers, with orange-brown stamens, are borne in summer and early fall. **H** 1–2ft (30–60cm), **S** 1ft (30cm).

☼ 💧Z10–11

Hibiscus trionum (Flower-of-the-hour)
Fairly fast-growing, upright annual, or short-lived perennial, with ovate, serrated leaves. Trumpet-shaped, creamy-white or pale yellow flowers, with purplish-brown centers, are borne from late summer to early fall. **H** 2ft (60cm), **S** 1ft (30cm).

☼ 💧Z10–11

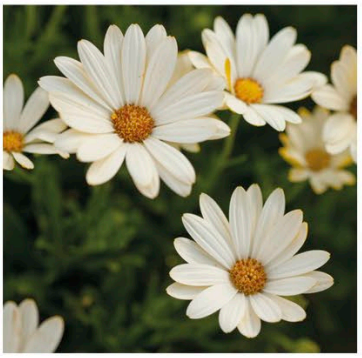


Martynia annua (Unicorn plant)
Fairly fast-growing, upright annual with long-stalked leaves. Bears foxglovelike, lobed, creamy-white flowers marked red, pink and yellow in summer, followed by horned, green, then brown, fruits. **H** 2ft (60cm), **S** 1ft (30cm). Min. 50–59ºF (10–15ºC).

☼ 💧Z10–11

Tanacetum parthenium (Feverfew)
Moderately fast-growing, short-lived, bushy perennial, grown as an annual. Has aromatic leaves and small, white flower heads in summer and early fall. **H** and **S** 8–18in (20–45cm).

☼ 💧Z4–9 ⓘ



Osteospermum **VOLTAGE WHITE (Balvowite')**
Compact, branching perennial. From late spring to fall, bears daisylike flower heads with white ray-florets, pale yellow on the reverse, above inversely lance-shaped, toothed, mid-green leaves. **H** 12–16in (30–40cm), **S** 24-28in (60–70cm).

☼ 💧Z9–11 ⓘ

PINK

Hypoestes phyllostachya
(Freckle face, Polka-dot plant)
Evergreen, bushy perennial or subshrub. Dark green leaves are covered with irregular, pink spots. Bears small, tubular, lavender flowers intermittently. **H** and **S** 30in (75cm). Min. 50ºF (10ºC).

☼ 💧Z10–11

Calibrachoa **Cabaret Series**
LIGHT PINK ('Balcablitpi')
Mound-forming and trailing, prolific perennial, grown as an annual. In summer–fall, trumpet-shaped, vivid pink flowers, 1½in (4cm) across, are borne on twiggy stems with linear, dark green leaves. **H** 6in (15cm), **S** 1½ft (45cm).

☼ 💧 pH Z10–11

Pentas lanceolata (Egyptian star, Star-cluster)
Mainly evergreen, loosely rounded shrub with hairy, bright green leaves. In summer–fall, produces dense clusters of pink, lilac, red or white flowers. **H** 6ft (2m), **S** 3ft (1m). Min. 45ºF (7ºC).

☼ 💧Z10–11

Catharanthus roseus **Boa Series 'Boa Peach'**
Evergreen, semitrailing shrub, grown as an annual. Flattish, rounded, very pale pink flowers, 2in (5cm) across, with a neat ring of reddish-pink around the tiny eye, are borne in summer. **H** 6in (15cm), **S** 1½–2ft (45–60cm). Min. 45ºF (7ºC).

☼ 💧Z10–11

Argyranthemum **'Summer Melody'**
Evergreen, prolific shrub, grown as an annual, bearing daisylike, fully double, dark-centered, pale pink flower heads, 1¼in (3cm) across, from early summer and into fall. Has lobed, glossy, dull green leaves. **H** 11in (28cm), **S** 7in (17cm).

☼ 💧Z7–11

***Diascia* LITTLE DANCER ('Pendan')**
Mound-forming or semitrailing perennial, usually grown as an annual. Spikes of tubular, coral-pink flowers are borne in clouds from late spring to fall. Has heart-shaped, pale green leaves. **H** 1ft (30cm), **S** 1½ft (45cm).

☼ ◑ Z7–9

***Lathyrus odoratus* Cupid Series 'Cupid Pink'**
Neat, compact annual with fragrant, pink-and-white, bicolored flowers in summer. Has pairs of mid-green, 1–2in (2.5–5cm) leaves and no tendrils. Good at the front of the border, or in a container. **H** 8in (20cm), **S** 1ft (30cm).

☼ ◑ Z9–10

***Nemesia* AMELIE ('Fleurame')**
Mound-forming, twiggy perennial, grown as an annual, with very fragrant, trumpet-shaped, 2-tone pink flowers, 1½in (4cm) across, with yellow lips, in summer. Has lance-shaped, neatly toothed, dark green leaves. Good for a container. **H** 5in (13cm), **S** 6in (15cm).

☼ ◑ Z9–10

***Lantana camara* Lucky Series LUCKY HONEY BLUSH ('Baluclush')**
Evergreen, mound-forming shrub, grown as an annual. Bears clusters of tubular, 5-lobed, yellow flowers, maturing to pink, with a spicy scent, in late spring–fall. Has ovate, finely wrinkled, deep green leaves. **H** 7in (18cm), **S** 1ft (30cm).

☼ ◑ Z11 ⓘ

***Gaura lindheimeri* 'Rosyjane'**
Upright, woody-based perennial, usually grown as an annual. Racemes of tubular, white flowers, with bright pink margins, are borne in summer–fall on twiggy stems with lance-shaped leaves. **H** 30in (75cm), **S** 1½ft (45cm).

☼ ◑ Z6–9

***Osteospermum* Sunny Series 'Sunny Marina'**
Evergreen, compact, slightly shrubby perennial, grown as an annual. In summer–fall, bears blue-eyed flowers with purple rays, shading to white. Has narrow, slightly toothed, dark green leaves. **H** and **S** 20–25cm (8–10in).

☼ ◑ Z10–11

***Fuchsia* 'Leonora'**
Vigorous, deciduous, upright shrub bearing bell-shaped, single, pink flowers with green-tipped sepals. Good for training as a standard. **H** 5ft (1.5m), **S** 3ft (1m).

◑ ◊ Z9–11

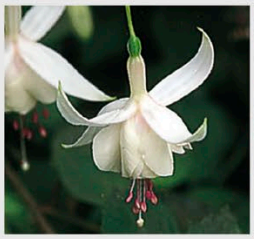
FUCHSIAS

Flowering freely all summer and throughout early fall until the first frosts, fuchsias make excellent container and border plants. The single or double blooms vary from small and dainty to bold and blowsy, their colorful outer sepals held above petals in similar or contrasting hues. A few also boast variegated foliage. Ranging in habit from strongly upright to broad and bushy and arching and trailing, there are fuchsias for many garden situations. Upright and bushy types inject summer color into permanent mixed border schemes or seasonal bedding displays, while larger types make good container specimens, combining well with other summer flowers. Trailing fuchsias are ideal for hanging baskets and window boxes.

F. 'John Ridding'

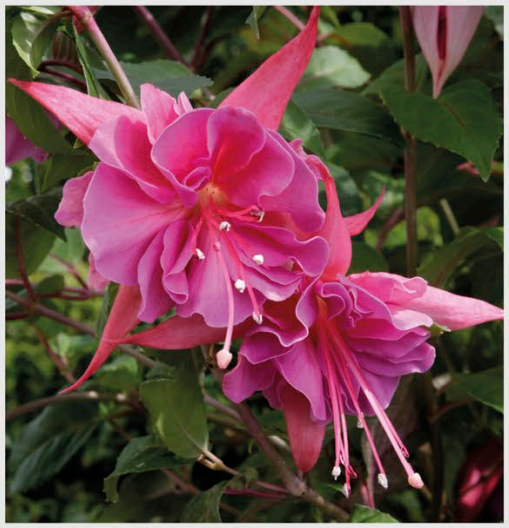
F. 'Lye's Unique'

F. 'Dollar Prinzessin'



F. 'Annabel'

F. 'Pink Galore'



F. 'Joanna Lumley'

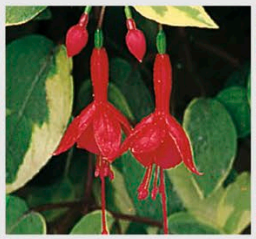
F. magellanica var. *gracilis* 'Aurea'

F. 'Celia Smedley'

F. 'Bicentennial'

F. 'Jack Shahan'

F. 'Swingtime'



F. 'Golden Marinka'

F. 'Mrs Lovell Swisher'

F. 'Nellie Nuttall'

F. 'Sunray'

F. 'Thalia'

F. 'Coralle'

F. 'Red Spider'

F. fulgens

***Primula* Belarina Series**
BELARINA PINK ICE ('Kerbelpice')
Rosette-forming, semievergreen, Primrose Group primula. Double white flowers, 1¾in (3cm) across, mature to light pink-purple in late winter and spring. Has ovate, deeply veined, dark green leaves. **H** 6in (16cm), **S** 1ft (30cm).

☼ ◖ Z6–9

***Petunia* Easy Wave Series**
'Mystic Pink'
Spreading, bushy Multiflora petunia. Early and free-flowering. From late spring to fall, produces pale pink flowers, to 2in (5cm) across, and ovate to lance-shaped, mid-green leaves. **H** 10in (25cm), **S** to 2ft (60cm).

☼ ◊ Z10–11

Gomphrena globosa
(Globe amaranth)
Moderately fast-growing, upright, bushy annual with ovate, hairy leaves. Bears oval, cloverlike flower heads in pink, yellow, orange, purple, or white in summer and early fall. **H** 1ft (30cm), **S** 8in (20cm).

☼ ◊ Z11

Rhodanthe chlorocephala
subsp. *rosea*
Moderately fast-growing, erect annual. Lance-shaped leaves are grayish-green; small, daisylike, papery, semidouble, pink flower heads are borne in summer. Flowers dry well. **H** 1ft (30cm), **S** 6in (15cm).

☼ ◊ Z10–11

x *Petchoa* Supercal Series SUPERCAL NEON ROSE ('Kakegawa S89')
Trailing, evergreen perennial (a *Petunia*/*Calibrachoa* hybrid), grown as an annual, with abundant, flared, trumpet-shaped yellow-eyed, vivid pink flowers borne continuously all summer. **H** 10in (25cm), **S** 14in (35cm).

☼ ◖ Z10–11

***Matthiola incana* Giant Excelsior Mix**
Fast-growing, erect, bushy biennial, grown as an annual. Lance-shaped leaves are grayish-green. Long spikes of highly scented flowers in shades of pink, red, pale blue, or white are produced in summer. **H** to 30in (75cm), **S** 1ft (30cm).

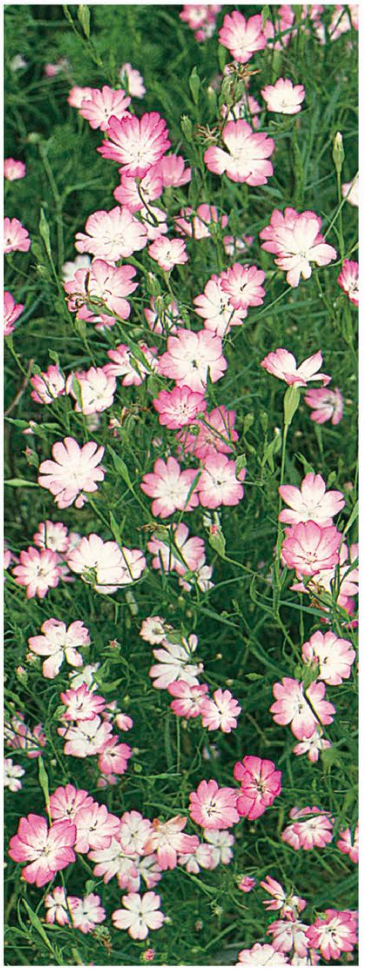
☼ ◊ Z5–8

Callistephus chinensis
Ostrich Plume Series
Fast-growing, bushy annual with long, branching stems. From late summer to late fall, produces spreading, feathery, reflexed, double flowers, mainly in pinks and crimsons. **H** to 2ft (60cm), **S** 1ft (30cm).

☼ ◊ Z2–11

Papaver somniferum
Paeoniiflorum Group
Fast-growing, erect annual with lobed, pale grayish-green leaves. Bears large, rounded, often cup-shaped, double flowers in a mixture of colors—red, pink, purple, or white—in summer. **H** 30in (75cm), **S** 1ft (30cm).

☼ ◊ Z3–8 ⓘ



Silene coeli-rosa
Moderately fast-growing, erect annual with lance-shaped, grayish-green leaves. Bears 5-petaled, pinkish-purple flowers with white centers in summer. **H** 1½ft (45cm), **S** 6in (15cm).

☼ ◊ Z3–11

***Agrostemma githago* 'Milas'**
Fast-growing, slender, upright, thin-stemmed annual. Has lance-shaped leaves and 5-petaled, purplish-pink flowers, 3in (8cm) across, in summer.
H 2–3ft (60–90cm), **S** 1ft (30cm).

☼ ◊ Z7–10 ⓘ

***Lobularia maritima* 'Rosie O'Day'**
Fast-growing, compact annual with lance-shaped, mid-green leaves. In summer, bears rounded, compact heads of small, sweet-scented flowers, which open white but become red-purple.
H to 6in (15cm), **S** to 10in (25cm).

☼ ◊ Z10–11

***Schizanthus* 'Dwarf Bouquet'** [mixed]
Moderately fast-growing, erect annual with fernlike, mid-green leaves. Bears a profusion of 2-lipped, open-faced flowers in a range of colors from pink to red, purple, yellow or white in summer and fall. **H** and **S** 8–10in (20–25cm).

☼ ◊ Z12–15

Malcolmia maritima (Virginian stock)
Fast-growing, slim, erect annual with ovate, grayish-green leaves. Produces tiny, fragrant, 4-petaled, pink, red or white flowers from spring to fall. Sow in succession for a long flowering season.
H 8in (20cm), **S** 2–3in (5–8cm).

☼ ◊ Z8–9

Silybum marianum
(Blessed Mary's thistle)
Biennial with a basal rosette of deeply lobed, very spiny, heavily white-marbled, deep green leaves. Bears thistlelike, dark purplish-pink flower heads on erect stems in summer and early fall.
H 4ft (1.2m), **S** 2ft (60cm).

☼ ◊ Z6–9

***Cleome hassleriana* 'Colour Fountain'**
Fast-growing, bushy annual with hairy stems and divided leaves. In summer, bears heads of narrow-petaled flowers, with long, protruding stamens, in shades of pink, purple, or white.
H 3–4ft (1–1.2m), **S** 1½–2ft (45–60cm).

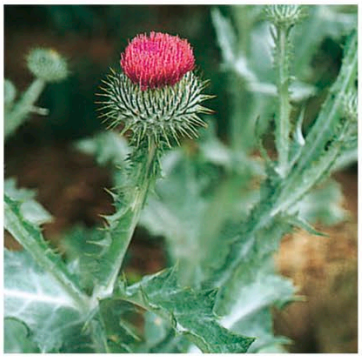
☼ ◊ Z11

***Callistephus chinensis* Milady Super Series** [rose]
Moderately fast-growing, erect, bushy annual with ovate, toothed leaves. Bears large, daisylike, double, rose-pink flower heads in summer and early fall. **H** 10–12in (25–30cm), **S** 12–18in (30–45cm).

☼ ◊ Z2–11

***Iberis umbellata* Fairy Series**
Fast-growing, upright, bushy annual with lance-shaped, mid-green leaves. Heads of small, 4-petaled flowers, in shades of pink, red, purple, or white, are produced in summer and early fall.
H and **S** 8in (20cm).

☼ ◊ Z2–11



Onopordum acanthium
(Cotton thistle, Scotch thistle)
Slow-growing, erect, branching biennial. Large, lobed, spiny leaves are hairy and bright silvery-gray; winged, branching flower stems bear deep purplish-pink flower heads in summer. **H** 6ft (1.8m), **S** 3ft (90cm).

☼ ◊ Z6–8

***Cosmos bipinnatus* Sensation Series**
Moderately fast-growing, bushy, erect annual. Has feathery, mid-green leaves and daisylike flower heads, to 4in (10cm) across, in shades of red, pink, or white, from early summer to early fall. **H** 3ft (90cm), **S** 2ft (60cm).

☼ ◊ Z2–11

***Lavatera trimestris* 'Silver Cup'**
Moderately quick-growing, erect, branching annual with ovate, lobed leaves. Shallowly trumpet-shaped, rose-pink flowers are produced from summer to fall. **H** 2ft (60cm), **S** 1½ft (45cm).

☼ ◊ Z2–11

***Silene armeria* 'Electra'**
Moderately fast-growing, erect annual with ovate, grayish-green leaves. Heads of 5-petaled, bright rose-pink flowers are produced in summer and early fall. **H** 1ft (30cm), **S** 6in (15cm).

☼ ◊ Z5–8

Malope trifida (Annual mallow)
Moderately quick-growing, erect, branching annual with round, lobed leaves. Flared, trumpet-shaped, reddish-purple flowers, to 3in (8cm) across, with deep pink veins, are produced in summer and early fall. **H** 3ft (90cm), **S** 1ft (30cm).

☼ ◊ Z6–11

***Dianthus chinensis* Baby Doll Series**
Neat, bushy annual or biennial, grown as an annual. Light or mid-green leaves are lance-shaped; small, single, zoned flowers in various colors are borne in summer and early fall. **H** 6in (15cm), **S** 6–12in (15–30cm).

☼ ◊ Z9–11

Xeranthemum annuum [double]
Erect annual with lance-shaped, silvery leaves and branching heads of daisylike, papery, double flower heads in shades of pink, mauve, purple, or white, in summer. Suitable for drying. **H** 2ft (60cm), **S** 1½ft (45cm).

☼ ◊ Z3–11

***Schizanthus pinnatus* 'Hit Parade'**
Erect, bushy annual with feathery, fernlike, light green leaves. Bears open cymes of tubular, then flared, 2-lipped, pink flowers with clear, contrasting markings in summer–fall. **H** and **S** 9–12in (23–30cm). Min. 41°F (5°C).

☼ ◊ Z2–11

PINK

***Calibrachoa* Can-Can Series 'Hot Pink Star'**
Mounded to semi-trailing, prolific perennial, grown as an annual. Bears a mass of trumpet-shaped, bright pink flowers, 1½in (4cm) across, with pale pink margins in summer–fall. **H** 10in (25cm), **S** 16in (40cm).

☼ ◑ pH Z9–11

***Lunaria annua* 'Variegata'**
Fast-growing, erect biennial with pointed-ovate, serrated, white-variegated leaves. Heads of small, scented, 4-petaled, deep purplish-pink flowers are borne in spring and early summer followed by rounded, silvery seed pods. **H** 30in (75cm), **S** 1ft (30cm).

☼ ◑ Z3–9

***Brassica oleracea* Northern Lights Series**
Moderately fast-growing, evergreen biennial. Has compact heads of large, tightly packed, bluish green leaves, crinkled at the edges, opening purple, pink or creamy-white in the center. **H** and **S** 12–16in (30–40cm).

☼ ◑ Z7–11

RED

Lotus berthelotii (Coral gem)
Semievergreen, straggling perennial suitable for a hanging basket or large pan in an alpine house. Has hairy, silvery branches and leaves, and clusters of pealike, scarlet flowers in summer. **H** 1ft (30cm), **S** indefinite. Min. 41ºF (5ºC).

☼ ◑ Z10–11

Gerbera jamesonii (Barberton daisy, Transvaal daisy)
Evergreen, upright perennial with basal rosettes of large, jagged leaves, and daisylike, variably colored flower heads, borne intermittently on long stems. Flowers good for cutting. **H** 2ft (60cm), **S** 1½ft (45cm). Min. 41ºF (5ºC).

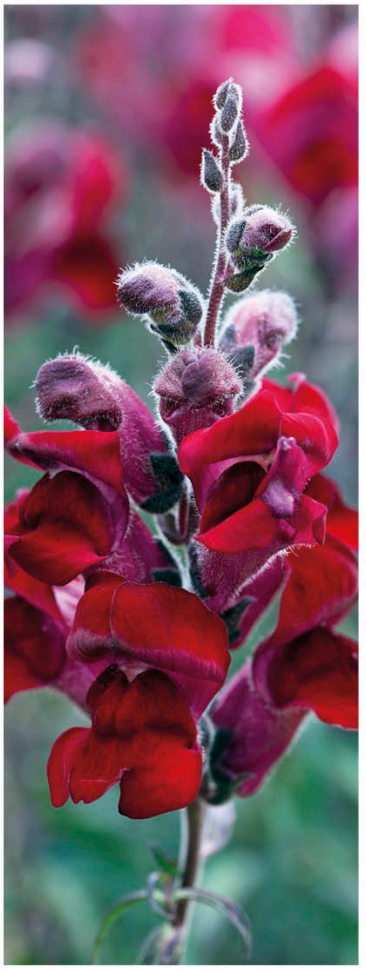
☼ ◑ Z11

***Catharanthus roseus* Cobra Series 'Cobra Burgundy'**
Evergreen, well-branched shrub, grown as an annual, with ovate, glossy, dark green leaves. Produces flat, rounded, 5-petaled, deep burgundy-red flowers in summer. **H** 14–16in (35–40cm), **S** 22–26in (55–65cm). Min. 41ºF (5ºC).

☼ ◑ Z10–11

***Zinnia elegans* Dreamland Series** [scarlet]
Moderately fast-growing, sturdy, erect annual with ovate, mid-green leaves. In summer and fall produces large, daisylike, semidouble, bright scarlet flower heads. **H** and **S** 1ft (30cm). Min. 41ºF (5ºC).

☼ ◑ Z3–10



***Antirrhinum majus* 'Black Prince'**
Erect, bushy perennial, grown as an annual. Lance-shaped, bronze leaves offset spikes of 2-lipped, deep crimson flowers produced in summer–fall. Deadhead regularly. **H** 1½ft (45cm), **S** 1ft (30cm).

☼ ◑ Z9–11

***Cosmos atrosanguineus* CHOCAMOCHA 'Thomocha'**
Bushy, tuberous perennial, grown as an annual, with slightly bowl-shaped, strongly chocolate-scented, deep red flower heads, 1½in (4cm) across, in summer–fall. Has pinnate, dark green leaves. **H** and **S** 14–15in (35–38cm).

☼ ◑ Z7–11

***Cuphea* 'Firecracker'**
Semi-trailing, subshrubby perennial, grown as an annual. Sticky stems bear lance-shaped, dark green leaves and, from late spring to fall, 2-lipped, bright red flowers. Is good in a mixed container. **H** 9in (23cm), **S** 16in (40cm).

☼ ◑ Z10–11

***Dahlia* HAPPY SINGLE ROMEO ('HS Romeo')**
Bushy, single dahlia, grown as an annual, bearing deep purple leaves with ovate leaflets. Produces dark-centered, deep red flowers, 4in (10cm) across, in summer and fall. **H** 22in (55cm), **S** 16in (40cm).

☼ ◑ Z9–11

***Tropaeoleum* 'Empress of India'**
Fast-growing, bushy annual. Has rounded, purple-green leaves. Trumpet-shaped, spurred, semidouble, rich scarlet flowers, 2in (5cm) wide, are borne from early summer to early fall. **H** 1ft (23cm), **S** 1½ft (45cm).

☼ ◑ Z10–11

***Pelargonium* 'Robyn Hannah'**
Vigorous, bushy, compact, stellar zonal pelargonium with rounded, light green leaves with darker zones. Clusters of double, bright red flowers, are borne freely in summer. **H** and **S** 16in (40cm). Min. 36°F (2°C).

☼ ◑ Z11

***Nemesia* Carnival Mixed**
Fairly fast-growing, bushy annual with serrated, pale green leaves. In summer has small, somewhat trumpet-shaped flowers in a range of colors, including yellow, red, orange, purple, and white. **H** 8–12in (20–30cm), **S** 6in (15cm).

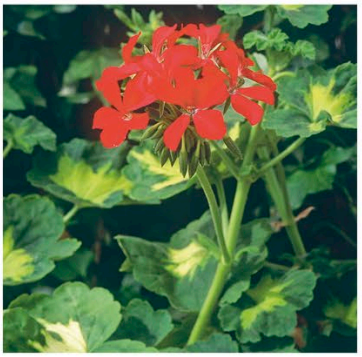
☼ ◊ Z9–10

***Impatiens* New Guinea Divine Series Salsa Mixed**
Hybrid perennial, grown as an annual, with whorled, mid-green leaves. Bears masses of flattened, bright red flowers, 2½in (6cm) across from late spring to fall. Mildew resistant. **H** to 30in (75cm), **S** 1½ft (45cm). Min. 50°F (10°C).

☼ ◑ Z12

***Tropaeolum majus* 'Hermine Grashoff'**
Trailing, short-lived perennial, grown as an annual. Has large, rounded, slightly wavy-edged, pale green leaves and, in summer–fall, double, sterile, bright red flowers. Suits a container. **H** 1½ft (45cm), **S** 2ft (60cm). Min. 37°F (3°C).

☼ ◑ Z11–12



***Pelargonium* 'Happy Thought'**
Fancy-leaved zonal pelargonium with single, light crimson flowers in clusters borne in summer. Rounded leaves each have a green-yellow butterfly marking in the center. **H** 16–18in (40–45cm), **S** 8–10in (20–25cm). Min. 36°F (2°C).

☼ ◊ Z9–10

***Dianthus chinensis* 'Fire Carpet'**
Slow-growing, bushy annual or biennial, grown as an annual. Lance-shaped leaves are light or mid-green. Small, rounded, single, bright red flowers are carried in summer and early fall. **H** 8in (20cm), **S** 6–12in (15–30cm).

☼ ◊ Z9–11

Amaranthus caudatus
(Love-lies-bleeding, Tassel flower)
Bushy annual with ovate, pale green leaves. Pendulous panicles of tassel-like, red flowers, 45cm (1½ft) long, are carried in summer–fall. **H** to 4ft (1.2m), **S** 1½ft (45cm).

☼ ◊ Z10–11

***Impatiens niamniamensis* 'Congo Cockatoo'**
Erect, short-lived perennial with reddish-green stems and ovate, toothed leaves. Bears narrow, hooded, bright red and yellow flowers, each with a distinctive hooked spur, at any time of year. Min. 59°F (15°C).

◑ ◑ Z12

***Linum grandiflorum* 'Rubrum'**
Fairly fast-growing, slim, erect annual. Lance-shaped leaves are gray-green; small, rounded, flattish, deep red flowers are produced in summer. **H** 1½ft (45cm), **S** 6in (15cm).

☼ ◊Z6–10

Cuphea ignea (Cigar flower)
Evergreen, spreading, bushy subshrub with bright green leaves. From spring to fall, bears tubular, dark orange-red flowers, each with a dark band and white ring at the mouth. **H** 12–30in (30–75cm), **S** 1–3ft (30–90cm). Min. 41°F (5°C).

☼ ◊Z10–11

***Erisymum cheiri* 'Blood Red'**
Evergreen, bushy perennial grown as a biennial, forming mounds of ovate to lance-shaped, mid- to deep green leaves. Produces fragrant, 4-petaled, deep red flowers, to 1in (2.5cm) across, in spring–summer. **H** and **S** 12–16in (30–40cm).

☼ ◊Z7–9

Alonsoa warscewiczii (Mask flower)
Perennial, grown as an annual, with slender, branching, red stems bearing ovate, toothed, deep green leaves. Spurred, bright scarlet flowers are produced during summer–fall. **H** 1–2ft (30–60cm), **S** 1ft (30cm).

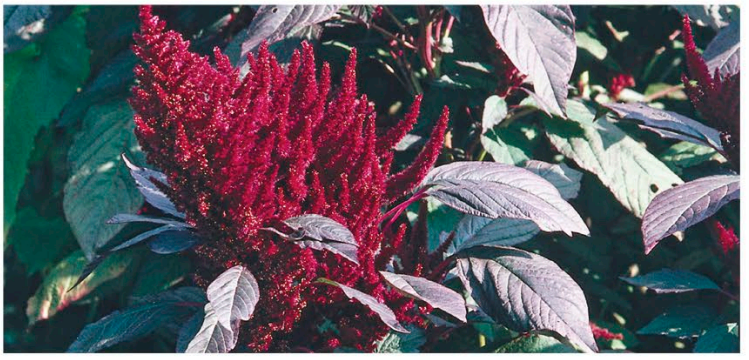
☼ ◊Z10–11

***Tagetes* 'Cinnabar'**
Fast-growing, bushy annual with aromatic, very feathery, deep green leaves. Heads of rounded, daisylike, single, rich rust-red flowers, yellow-red beneath, are produced in summer and early fall. **H** and **S** 1ft (30cm).

☼ ◊Z2–10 ⓘ

***Ricinus communis* 'Impala'**
Fast-growing, evergreen, erect shrub, usually grown as an annual. Has deeply lobed, bronze leaves, to 1ft (30cm) wide, and clusters of small, red flowers in summer, followed by globular, prickly, red seed heads. **H** 5ft (1.5m), **S** 3ft (90cm).

☼ ◊Z11–14 ⓘ



Amaranthus hypochondriacus
(Prince's feather)
Bushy annual bearing upright, sometimes flattened, panicles, 6in (15cm) long or more, of dark red flowers in summer–fall. Leaves are heavily suffused purple. **H** to 4ft (1.2m), **S** 1½ft (45cm).

☼ ◊Z3–10

PELARGONIUMS

Pelargoniums are perfect for containers and beds, and flower almost continuously in warm climates or under glass. Most fall into one of four main groups. Zonal geraniums have rounded leaves, clearly marked with a darker "zone," and single to double flowers. Regal types are shrubby with serrated leaves and delicate, trumpet-shaped flowers. Ivy-leaved pelargoniums are trailing plants with lobed leaves and single to double flowers—a good choice for hanging baskets. Scented-leaved types and species have small, star-shaped flowers and are grown principally for their fragrant foliage. Unique types are tall subshrubs with regal, brightly colored flowers; some also have scented leaves. To flower well, all types need sun and well-drained soil.

P. **'Attar of Roses'** ⓘ
[scented-leaved]

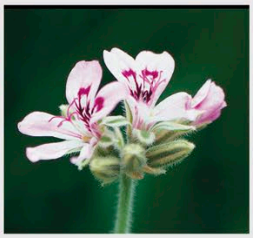
P. **Fireworks Series** FIREWORKS SCARLET **('Fiwoscarl')** [scented-leaved]

P. **'Clorinda'** ⓘ
[scented-leaved]

P. **'Evka'** [ivy-leaved]

P. **Maverick Series 'Maverick Star'**
[zonal]

P. **'Fraiche Beauté'** ⓘ
[zonal]



P. **'Lady Plymouth'** ⓘ
[scented-leaved]

P. **'Voodoo'** ⓘ
[unique]

P. **Regalia Series 'Regalia Chocolate'**
[regal]

P. **Horizon Divas Series 'Horizon Divas Raspberry Ripple'** [zonal]

P. **Bullseye Series 'Bullseye Salmon'** [zonal]

P. **'Brookside Primrose'** ⓘ
[zonal]

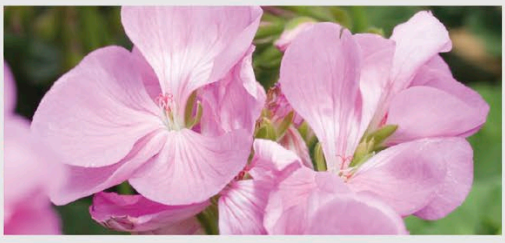
P. **Decora Series 'Decora Dark Pink'**
[ivy-leaved]

P. **'Lachskönigin'** ⓘ
[ivy-leaved]

P. **'Tip Top Duet'** ⓘ
[regal]

P. **Horizon Divas Series 'Horizon Divas Orange Ice'** [zonal]

P. **Antik Series** ANTIK SALMON **('Tiksal')** [zonal]



P. BLUE WONDER **('Pacbla')** [zonal]

RED

***Papaver rhoeas* Shirley Group** [single]
Fast-growing, slender, erect annual with lobed, light green leaves. Rounded, often cup-shaped, single flowers, in shades of red, pink, salmon, or white, are borne in summer. **H** 2ft (60cm), **S** 1ft (30cm).

☼ ◊ Z3–10

Antirrhinum majus
Liberty Classic Series 'Liberty Scarlet'
Erect perennial, grown as an annual, branching from the base. Has lance-shaped, dull green leaves and in summer–fall, bears spikes of tubular, 2-lipped, pinkish-red flowers. **H** 18–22in (45–55cm), **S** 12–14in (30–35cm).

☼ ◑ Z7–10

PURPLE

***Aeonium* 'Zwartkop'**
Bushy, perennial succulent with stems each crowned by a rosette, to 6in (15cm) across, of narrow, purple leaves. Bears golden pyramids of flowers in spring on 2–3-year-old stems, which then die. **H** 2ft (60cm), **S** 3ft (1m). Min.41°F (5°C).

◐ ◊ Z9–11

***Lycianthes rantonnetii* 'Royal Robe'**
Evergreen, loosely rounded shrub with smooth, bright green leaves. In summer, bears clusters of rich purple-blue flowers that open almost flat. **H** and **S** 3–6ft (1–2m).

☼ ◊ Z8–10 ⓘ

***Alternanthera dentata* 'Purple Knight'** (Joseph's coat)
Vigorous, evergreen perennial, grown as an annual. Forms a spreading mound of upright, purple stems clad in ovate, slightly glossy, dark purple leaves. **H** 2–3ft (60–90cm), **S** 3–4ft (90–120cm). Min. 41°F (5°C).

☼ ◑ Z11

Lantana montevidensis
Evergreen, trailing or mat-forming shrub with serrated leaves. Produces heads of rose-purple flowers, each with a yellow eye, intermittently all year, but mainly in summer. **H** 8–39in (20–100cm), **S** 2–4ft (60–120cm). Min. 50–55°F (10–13°C).

☼ ◊ Z8–11 ⓘ

***Angelonia angustifolia* AngelMist Series 'AngelMist Lavender Stripe'**
Evergreen, upright perennial, grown as an annual, with lance-shaped, toothed leaves. Bears slender racemes of 2-lipped flowers, ¾in (2cm) across, purple above and white below, in summer. **H** 1ft (30cm), **S** 14in (35cm). Min. 50°F (10°C)

☼ ◑ Z9–10

***Tradescantia pallida* 'Purpurea'**
Evergreen, creeping perennial with dark purple stems and slightly fleshy leaves. Bears pink or pink-and-white flowers in summer. **H** 12–16in (30–40cm), **S** 12in (30cm) or more.

☼ ◊ Z11–12

Heliotropium arborescens
Evergreen, bushy shrub. Semi-glossy, dark green leaves are finely wrinkled. Purple to lavender flowers are borne in dense, flat clusters from late spring to winter. **H** 1½ft (45cm), **S** 1–1½ft (30–45cm). Min. 7°C (45°F).

☼ Z7–10

***Solenostemon scutellarioides* 'Inky Fingers'**
Fast-growing, semi-trailing, bushy perennial, grown as an annual. Rounded, blackish-red leaves are cut into 5–11 deep lobes and edged in green. **H** 1–2ft (30–60cm), **S** 24–39in (60–100cm). Min. 41°F (5°C).

☼ ◑ Z11–12

***Solenostemon* 'Chocolate Mint'**
Fast-growing perennial, grown as an annual, with broadly ovate, chocolate-brown leaves margined in fresh mint-green. Pinch out any flower spikes. **H** 14–20in (35–50cm), **S** 12–14in (30–35cm). Min. 41°F (5°C).

☼ ◑ Z11–12

***Lobelia erinus* Waterfall Series 'Waterfall Light Lavender'**
Mound-forming, semi-trailing perennial, grown as an annual, with narrowly ovate to lance-shaped, dark green leaves. Bears 2-lipped, lobed, pale violet flowers, ¾in (2cm) across, with white eyes, in summer. **H** 6–8in (15–20cm), **S** 8–12in (20–30cm).

☼ ◑ Z2–8

Strobilanthes dyeriana
(Purple Shield)
Evergreen, relatively unbranched subshrub, grown as an annual, with elliptical, dark green, leaves, 6in (15cm) long, almost fully flushed in silvery purple, leaving only a pattern of dark green veins. **H** and **S** 3ft (90cm).

☼ ◑ Z11–12

***Dahlia* HAPPY SINGLE WINK ('HS Wink')**
Bushy, single dahlia, grown as an annual, bearing deep purple leaves with ovate leaflets. Pale purple flowers, 3in (8cm) across, each have a dark purple ring around the eye. Good in a mixed border. **H** 28in (70cm), **S** 18in (45cm).

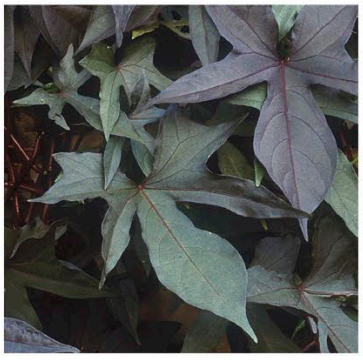
☼ ◑ Z9–11

***Petunia* Surfinia Series**
SURFINIA BLUE VEIN ('Sunsolos')
Vigorous, trailing perennial, grown as an annual. In summer, almost white flowers, 2in (5cm) across, developing mauve tints, are borne with vivid purple-blue veins and dark throats. Good in a basket. **H** 10in (25cm), **S** 2ft (60cm).

☼ ◑ Z11

***Osteospermum* Serenity Series 'Dark Purple'**
Compact, branching perennial, grown as an annual, with lance-shaped, slightly toothed leaves. Daisylike, pinkish purple flower heads, to 3in (8cm) across, are borne from late spring to early fall. **H** 10–14in (25–35cm), **S** 14–20in (35–50cm).

☼ ◑ Z10–11



***Ipomoea batatas* 'Blackie'**
Evergreen, tuberous, trailing perennial grown as an annual, with 3-lobed, almost black leaves. May bear trumpet-shaped, purple-throated, lavender flowers, 1in (2.5cm) across, in summer. Good in a mixed container. **H** 6–10in (15–25cm), **S** 1½–2ft (45–60cm). Min. 41°F (5°C).

☼ ◑ Z11 ⓘ

***Petunia* Shock Wave Series 'Denim'**
Semi-trailing, Multiflora petunia with a mounded, spreading habit and ovate to lance-shaped, mid-green leaves. Bears prolific, purple-blue flowers from late spring to fall. **H** 8–10in (20–25cm), **S** 2–3ft (60–90cm).

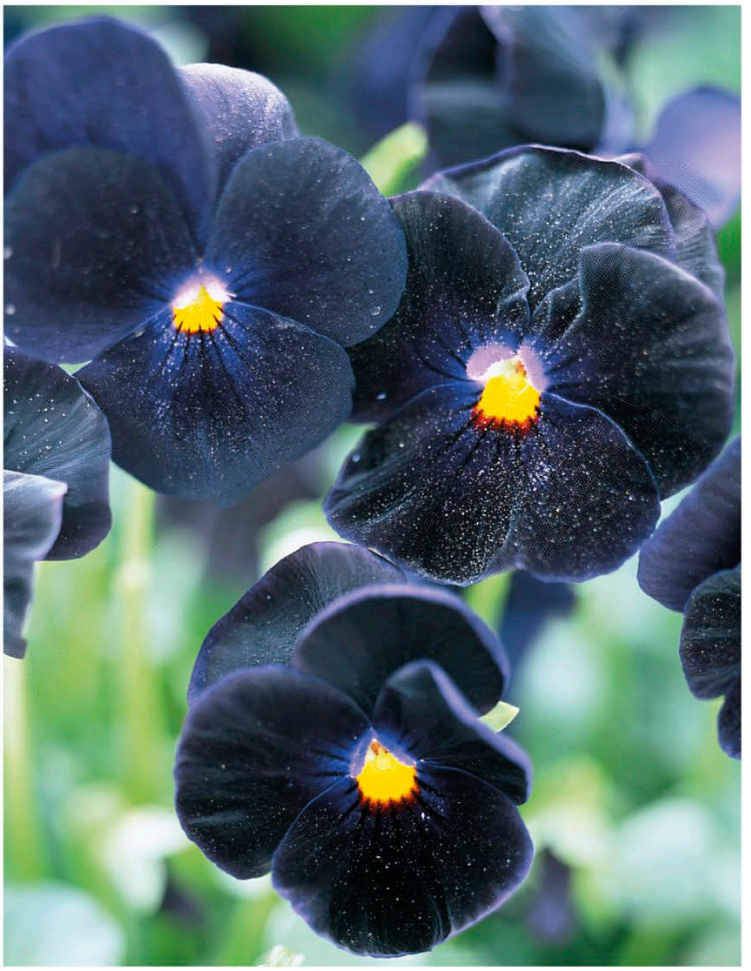
☼ ◑ Z10–11

***Pennisetum* x *advena* 'Rubrum'**
Clump-forming, herbaceous perennial grass, grown as an annual, with slender, upright, rather rough, dark purple leaves. In summer, produces dense, cylindrical panicles of crimson spikelets, with bearded bristles, fading to green. **H** 3ft (90cm), **S** 1½ft (45cm).

☼ ◑ Z8–11

***Callistephus chinensis* Milady Super Series** [blue]
Moderately fast-growing, erect, bushy annual with ovate, toothed leaves. Bears large, daisylike, double, purplish-blue flower heads in summer and early fall. **H** 10–12in (25–30cm), **S** 1–1½ft (30–45cm).

☼ ◊ Z2–11



***Viola* x *wittrockiana* 'Sorbet Black Delight' (Sorbet Series)**
Neat, prolific perennial, grown as a biennial. Small, 5-petaled, deep black flowers, each with a small, gold eye, are borne in winter and spring over ovate, shallowly lobed, mid-green leaves. **H** and **S** 6–8in (15–20cm).

☼ ◑ Z8–11

***Cerinthe major* 'Purpurascens'**
Annual of lax habit with ovate to spoon-shaped leaves, to 2½in (6cm) long. Bears terminal sprays of nodding, tubular, pale to mid-yellow flowers, with violet-tinged tips. Bracts around flowers are strongly suffused purple. **H** and **S** 2ft (60cm).

☼ ◊ Z9–11

***Nierembergia linariifolia* 'Purple Robe'**
Moderately fast-growing, rounded, branching perennial, grown as an annual, with narrow, lance-shaped leaves. Bears cup-shaped, dark bluish-purple flowers in summer and early fall. **H** and **S** 6–8in (15–20cm).

☼ ◊ Z7–11

***Petunia* Frenzy Series 'Blue Vein'**
Vigorous Grandiflora petunia with ovate leaves. From late spring to fall, produces creamy-white flowers with strong violet veining. **H** 10in (25cm), **S** 1ft (30cm).

☼ ◑ Z10–11

***Salvia farinacea* 'Victoria Blue'**
Moderately fast-growing perennial, grown as an annual, with many erect stems. Has ovate or lance-shaped leaves and spikes of tubular, violet-blue flowers in summer. **H** 1½ft (45cm), **S** 1ft (30cm).

☼ ◊ Z8–11

***Viola* x *wittrockiana* Joker Series**
Bushy, spreading perennial, usually grown as an annual or biennial. Large, rounded, 5-petaled, purplish-blue flowers, with black and white "faces" and yellow eyes, are borne in summer. **H** and **S** 6in (15cm).

☼ ◊ Z8–11

Campanula medium
'Bells of Holland'
Slow-growing, evergreen, clump-forming, erect biennial with lance-shaped, toothed leaves. In spring and early summer, bears bell-shaped flowers in blue, lilac, pink, or white. **H** to 2ft (60cm), **S** 1ft (30cm).

☼ ◊ Z5–8

Salvia sclarea* var. *turkestanica
of gardens
Moderately fast-growing, erect biennial, grown as an annual. Has aromatic, ovate, hairy leaves and panicles of tubular, white and lavender-purple flowers with prominent, lavender-purple bracts in summer. **H** 30in (75cm), **S** 12in (30cm).

☼ ◊ Z5–9

Trachelium caeruleum (Throatwort)
Moderately fast-growing, erect perennial, grown as an annual. Has ovate, serrated leaves and bears clustered heads of small, tubular, lilac-blue or white flowers in summer. **H** 2–3ft (60–90cm), **S** 1ft (30cm).

☼ ◊ Z9–13

***Myosotis* Sylva Series**
Compact, bushy, early-flowering perennial, grown as a biennial. Has lance-shaped, hairy leaves and, from midspring to early summer, clustered spikes of small, 5-lobed flowers in blue, pink, or white. **H** and **S** 9in (23cm).

◐ ◊ Z5–9

***Isotoma* Avant-Garde Series**
Neat, domed, woody-based perennial, grown as an annual. Rounded mounds of slender, lobed leaves are topped by star-shaped, 5-petaled flowers, in blue, purple, pink, and white, in summer. Good in a container. **H** 6–12in (15–30cm), **S** 9–15in (23–38cm).

☼ ◊ Z10–11

Ageratum houstonianum
'Blue Danube'
Moderately fast-growing, hummock-forming annual with pointed-ovate leaves. Produces clusters of feathery, brushlike, lavender-blue flower heads in summer–fall. Makes a useful edging plant. **H** and **S** 6in (15cm).

☼ ◊ Z10–11

***Salvia farinacea* 'Strata'**
Upright, slightly tuberous perennial, grown as an annual. White-mealy stems bear spikes of blue flowers, with broad lower lips, ¾in (2cm) long, each in a white calyx, in summer–fall. Has glossy, narrowly lance-shaped, gray-green leaves. **H** 2ft (60cm), **S** 1ft (30cm).

☼ ◑ Z8–11

Nemophila menziesii
(Baby blue-eyes)
Fast-growing, spreading annual with serrated, grayish-green leaves. Small, bowl-shaped, blue flowers with white centers are produced in summer. **H** 8in (20cm), **S** 6in (15cm).

☼ ◊ Z2–11

Phacelia campanularia
(California bluebell)
Moderately fast-growing, branching, bushy annual with ovate, serrated, deep green leaves. Bell-shaped, pure blue flowers, 1in (25cm) across, are borne in summer and early fall. **H** 8in (20cm), **S** 6in (15cm).

☼ ◊ Z5–10 ⓘ

Nigella damascena
Persian Jewels Group
Fast-growing, erect annual with feathery leaves. Bears small, semidouble flowers in shades of blue, pink, or white in summer, followed by inflated seed pods, which can be cut and dried. **H** 1½ft (45cm), **S** 8in (20cm).

☼ ◊ Z2–11

Gilia capitata
Erect, branching annual. Has very feathery, mid-green leaves and tiny, dense, rounded heads of soft lavender-blue flowers in summer and early fall. Good for cut flowers. **H** 1½ft (45cm), **S** 8in (20cm).

☼ ◊ Z7–10

***Pericallis* x *hybrida* Senetti Series**
SENETTI BLUE BICOLOR ('Sunseneribuba')
Mound-forming, bushy perennial, grown as an annual. Daisylike, white flowers, 3in (7cm) across, with vivid blue tips and magenta eyes, are borne in spring. Has ovate, serrated, mid–deep green leaves. **H** 15–18in (38–45cm), **S** 12–15in (30–38cm).

☼ ◑ Z11

***Lobelia erinus* 'Sapphire'**
Slow-growing, pendulous, spreading annual or occasionally perennial. Ovate to lance-shaped leaves are pale green. Small, sapphire-blue flowers with white centers are produced continuously in summer and early fall. **H** 8in (20cm), **S** 6in (15cm).

☼ ◊ Z2–8

***Convolvulus tricolor* 'Blue Flash'**
Moderately fast-growing, upright, bushy annual with ovate to lance-shaped leaves. Bears small, saucer-shaped, intense blue flowers with cream and yellow centers in summer. **H** 8–12in (20–30cm), **S** 8in (20cm).

☼ ◊ Z9–11

***Ageratum houstonianum* 'Blue Mink'**
Moderately fast-growing, hummock-forming annual. Has pointed-ovate leaves and bears clusters of feathery, brushlike, pastel blue flower heads in summer–fall. A useful edging plant. **H** and **S** 8–12in (20–30cm).

☼ ◊ Z10–11

***Cynoglossum amabile* 'Firmament'**
Slow-growing, upright, bushy annual or biennial with lance-shaped, hairy, gray-green leaves. Pendulous, tubular, pure sky-blue flowers are produced in summer. **H** 1½ft (45cm), **S** 1ft (30cm).

☼ ◊ Z5–8

***Anchusa capensis* 'Blue Angel'**
Bushy biennial, grown as an annual. Has lance-shaped, bristly leaves. Heads of shallowly bowl-shaped, brilliant blue flowers are borne in summer.
H and **S** 8in (20cm).

☼ ◊ Z7–9

***Nigella damascena* 'Miss Jekyll'**
Fast-growing, slender, erect annual. Feathery leaves are bright green; small, rounded, many-petaled, semidouble, blue flowers are produced in summer, followed by inflated seed pods that can be cut and dried. **H** 1½ft (45cm), **S** 8in (20cm).

☼ ◊ Z2–11

Commelina coelestis (Day flower)
Fairly fast-growing, upright perennial, usually grown as an annual, with lance-shaped, mid-green leaves. Small, 3-petaled, bright pure blue flowers are freely produced from late summer to midfall. **H** to 1½ft (45cm), **S** 1ft (30cm).

☼ ◊ Z9–10

Centaurea cyanus [tall, blue] (Cornflower)
Fast-growing, erect, branching annual. Has lance-shaped, gray-green leaves and branching heads of daisylike, blue flowers in summer and early fall. **H** to 3ft (90cm), **S** 1ft (30cm).

☼ ◊ Z2–9

***Lobelia erinus* 'Crystal Palace'**
Slow-growing, spreading, compact, bushy annual or occasionally perennial. Bronzed leaves are ovate to lance-shaped; small, deep blue flowers are produced continuously in summer and early fall. **H** 4–8in (10–20cm), **S** 4–6in (10–15cm).

☼ ◊ Z2–8

***Myosotis sylvatica* 'Blue Ball'**
Slow-growing, bushy, compact perennial, often grown as a biennial. Has lance-shaped leaves and, in spring and early summer, bears spikes of tiny, 5-lobed, deep blue flowers. **H** to 8in (20cm), **S** 6in (15cm).

◐ ◊ Z5–9

Borago officinalis (Borage)
Spreading, clump-forming, annual herb. Has ovate, crinkled, rough-haired leaves and sprays of star-shaped, blue flowers in summer and early fall. Young leaves are sometimes used as a coolant in drinks. Self-seeds prolifically.
H 3ft (90cm), **S** 1ft (30cm).

☼ ◊ Z6–9

Sedum caeruleum
Moderately fast-growing annual with branching flower stems. Ovate, light green leaves become red-tinged when clusters of small, star-shaped, light blue flowers with white centers are borne in summer. **H** and **S** 4–6in (10–15cm).

☼ ◊ Z8–10 ⓘ

***Jacobaea maritima* 'Silver Dust'**
Moderately fast-growing, evergreen, bushy subshrub, usually grown as an annual, with deeply lobed, silver leaves. Small, daisylike, yellow flower heads are borne in summer, but are best removed.
H and **S** 1ft (30cm).

☼ ◊ Z8–11

Leucophyta brownii
Evergreen, intricately branched shrub with velvety, gray branches and tiny, scalelike leaves. Clusters of flowers, silver in bud, yellowish when expanded, are borne in summer.
H 16–30in (40–75cm), **S** 16–36in (40–90cm).

☼ ◊ Z9–10

Bassia scoparia* f. *trichophylla
(Burning bush, Summer cypress)
Moderately fast-growing, erect, very bushy annual. Narrow, lance-shaped, light green leaves, 2–3in (5–8cm) long, turn red in fall. Has insignificant flowers. **H** 3ft (90cm), **S** 2ft (60cm).

☼ 💧Z9–11

Nicotiana langsdorffii
Fairly slow-growing, erect, branching perennial, grown as an annual, with ovate to lance-shaped leaves. Slightly pendent, bell-shaped, pale green to yellow-green flowers are borne in summer. **H** 3–5ft (1–1.5m), **S** 1ft (30cm).

☼ 💧Z10–11 ⓘ

***Zinnia elegans* 'Envy'**
Moderately fast-growing, sturdy, erect annual. Has ovate to lance-shaped, pale or mid-green leaves and large, daisylike, double, green flower heads in summer and early fall. **H** 2ft (60cm), **S** 1ft (30cm).

☼ 💧Z3–10

Moluccella laevis
(Bells of Ireland, Shell flower)
Fairly fast-growing, erect, branching annual. Rounded leaves are pale green; spikes of small, tubular, white flowers, each surrounded by a conspicuous, pale green calyx, are borne in summer. **H** 2ft (60cm), **S** 8in (20cm).

☼ 💧Z9–11

***Petunia* Surfinia Series**
SURFINIA LIME ('Keiyeul')
Vigorous, trailing perennial grown as an annual, with slightly star-shaped, white flowers, 2½in (6cm) across, shading to lime-yellow in the throats, in summer. Good in a hanging basket. **H** 10in (25cm), **S** 2ft (60cm).

☼ 💧Z11

BEGONIAS

The genus *Begonia* is one of the most versatile, providing interest throughout the year. Semperflorens begonias are excellent for summer bedding, while the *Rex-cultorum* group offers distinctive, handsome foliage in a huge variety of decorative shades and unusual textures. Other begonias, such as the *Tuberhybrida* cultivars with their large, showy blooms, are grown mostly for their flowers. Most begonias are not suitable for permanent outdoor cultivation in frost-prone areas as they are not hardy, but they make attractive houseplants and displays in summer containers. Begonias may be fibrous-rooted, rhizomatous, or tuberous, the tubers becoming dormant in winter. Grow them in a light position, shaded from direct sun.

B. serratipetala

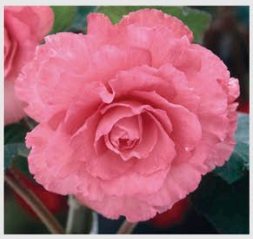
***B.* BONFIRE ('Nzcone')**

***B.* Nonstop Series 'Nonstop White'**

***B.* 'Billie Langdon'**

***B.* Mocca Series 'Mocca Scarlet'**

B. bowerae



***B.* 'Roy Hartley'**

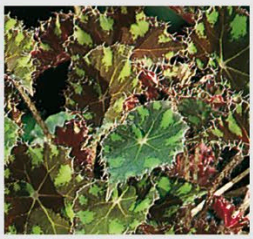
B. masoniana

B. dregei

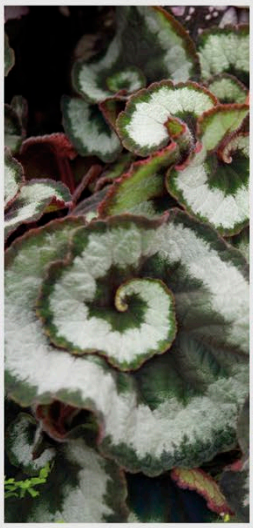
B. albopicta

***B.* 'Merry Christmas'**

***B.* DRAGON WING RED ('Bepared')**



***B.* 'Tiger Paws'**



***B.* 'Escargot'**

***B.* Illumination Series 'Illumination Salmon Pink'**

***B.* 'Benitochiba'**

B. scharffii

***B.* 'Orange Rubra'**

B. sutherlandii

Ricinus communis (Castor-oil plant)
Fast-growing, evergreen, erect shrub, usually grown as an annual. Has large, deeply lobed, mid-green leaves and heads of green and red flowers in summer, followed by globular, prickly seed pods. **H** 5ft (1.5m), **S** 3ft (90cm).

☼ ◊ Z11–14 ⓘ

***Nicotiana* 'Lime Green'**
Upright annual with spoon-shaped, mid-green leaves. In late summer and fall, produces racemes of open trumpet-shaped, greenish-yellow flowers that are fragrant at night. **H** 2ft (60cm), **S** 10in (25cm).

☼ ◊ Z10–11 ⓘ

***Perilla* 'Magilla Vanilla'**
Fast-growing perennial, grown as an annual, with broadly ovate, bright green leaves brightly splashed in the centers in rich cream. Spikes of tiny, bell-shaped flowers are occasionally borne in late summer; pinch them out. **H** 2–3ft (60–90cm), **S** 1½–2ft (45–60cm).

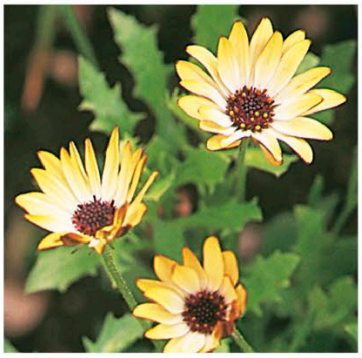
☼ ◊ Z10–11

Setaria macrostachya (Italian millet)
Upright, clump-forming, perennial grass, grown as an annual. Has long, pointed, coarse, mid-green leaves each with a pale central stripe. Erect spikes of bristly, vivid green flower heads are produced in summer. **H** 3ft (90cm), **S** 2ft (60cm).

☼ ◊ Z9–11

***Argyranthemum* 'Jamaica Primrose'**
Evergreen, woody-based perennial with fernlike, pale green leaves. Daisylike, single, soft yellow flower heads are borne in summer. Take stem cuttings in early fall. **H** and **S** to 3ft (1m).

☼ ◊ Z7–11



***Osteospermum* 'Buttermilk'**
Evergreen, upright, semi-woody perennial. Daisylike, pale yellow flower heads, with dark eyes, are borne singly amid gray-green foliage from midsummer to fall. **H** 2ft (60cm), **S** 1ft (30cm).

☼ ◊ Z10–11

***Brugmansia* x *candida* 'Grand Marnier'**
Evergreen, robust shrub with large, ovate to elliptic leaves. Pendent, flared, trumpet-shaped, apricot flowers open from an inflated calyx in summer. **H** 10–15ft (3–5m), **S** 5–8ft (1.5–2.5m). Min. 45–50°F (7–10°C).

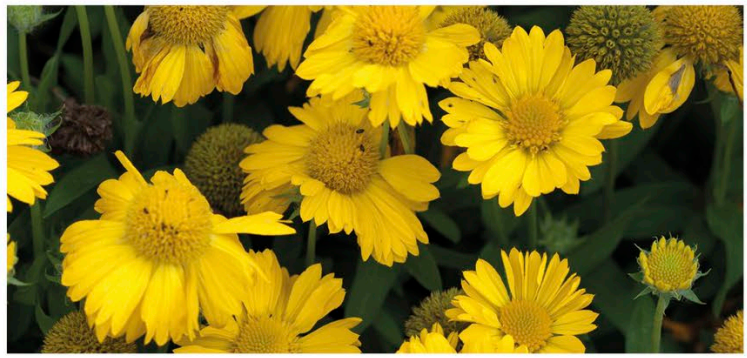
☼ ◊ Z11 ⓘ

***Iresine herbstii* 'Aureoreticulata'**
Evergreen, bushy perennial with red stems and inconspicuous flowers. Rounded, mid-green leaves, 4in (10cm) long, have yellow or red veins and notched tips. **H** to 2ft (60cm), **S** 1½ft (45cm). Min. 45°F (7°C).

☼ ◊ Z11

Euryops pectinatus
Evergreen, upright shrub. Deeply cut, gray-green leaves set off large heads of daisylike, bright yellow flowers, borne in late spring and early summer and often again in winter. **H** and **S** 3ft (1m). Min. 41–5°F (5–7°C).

☼ ◊ Z11



***Gaillardia* x *grandiflora* Mesa Series**
Bushy, compact, short-lived perennial, with soft, divided leaves. Large, daisylike, single, bright yellow, orange, or bicolored gold and red flower heads are borne from summer to fall. **H** 16in (40cm), **S** 20in (50cm).

☼ ◑ Z3–10

Duranta erecta
(Pigeon berry, Skyflower)
Fast-growing, usually evergreen, bushy shrub. Bears spikes of lilac-blue flowers, mainly in summer, followed by yellow fruits. **H** 10–20ft (3–6m), **S** 6–10ft (2–3m). Min. 50°F (10°C).

☼ ◊ Z11

***Duranta erecta* 'Gold Edge'**
Evergreen, fast-growing, bushy shrub, grown as an annual, with ovate, toothed, glossy, bright green leaves, 2–3in (5–7.5cm) long, irregularly margined in bright yellow. Rarely flowers. **H** and **S** 2ft (60cm). Min. 50°F (10°C).

☼ ◑ Z11

***Pelargonium* 'Mrs. Quilter'**
Evergreen, fancy-leaved zonal pelargonium. Has yellow leaves with wide, chestnut-brown zones and single, pink flowers. **H** 12–16in (30–40cm), **S** 5–6in (12–15cm). Min. 41°F (5°C).

☼ ◑ Z7–11

***Nemesia* Sunsatia Series**
SUNSATIA MANGO ('Inupyel')
Evergreen, semi-trailing, woody-based perennial, grown as an annual, with lance-shaped, green leaves. Racemes of 2-lipped, yellow flowers, with golden lips and purple throats, are borne in summer. **H** 9in (23cm), **S** 18in (45cm).

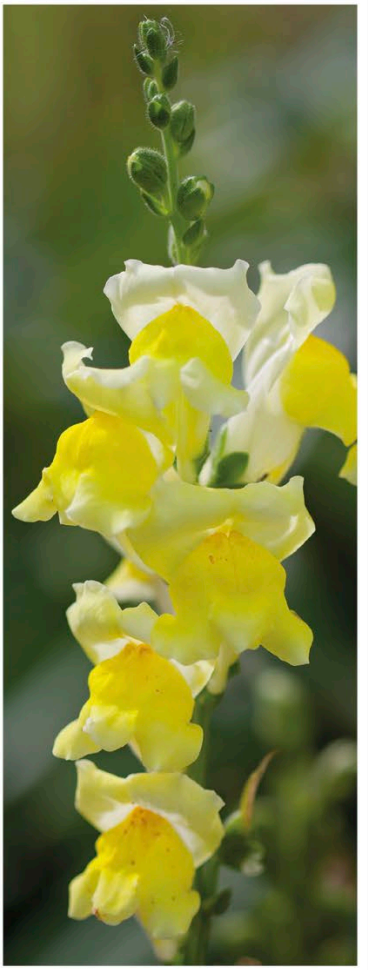
☼ ◑ Z9–10

***Rudbeckia hirta* 'Toto Gold'**
Upright, strong-stemmed biennial or short-lived perennial, often grown as an annual, with ovate to lance-shaped, mid-green leaves. Bears large, daisylike, bright yellow flower heads with very dark brown centers in summer and early fall. **H** and **S** to 18in (45cm).

☼ ◊ Z3–7

Glaucium flavum (Horned poppy)
Slow-growing, erect biennial with ovate, lobed, light grayish-green leaves. Poppylike, vivid yellow flowers, 3in (8cm) across, are borne in summer and early fall. **H** 1–2ft (30–60cm), **S** 1½ft (45cm).

☼ ◊ Z6–9 ⓘ



Antirrhinum majus
Liberty Classic Series 'Liberty Yellow'
Erect perennial, grown as an annual, branching from the base. Has lance-shaped, dull green leaves and in summer–fall, bears spikes of tubular, 2-lipped, 2-tone yellow flowers. **H** 18–22in (45–55cm), **S** 12–14in (30–35cm).

☼ ◑ Z9–11

***Tagetes* Gold Coins Series**
Fast-growing, erect, bushy annual. Has aromatic, feathery, glossy, deep green leaves and large, daisylike, double flower heads in shades of yellow and orange in summer and early fall. **H** 36in (90cm), **S** 12–18in (30–45cm).

☼ ◊ Z8–11 ⓘ

***Xerochrysum bracteatum* Sundaze Series SUNDAZE GOLD ('Redbragol')**
Bushy, rounded, short-lived perennial, grown as an annual, with lance-shaped, mid-green leaves. Produces small, papery, daisylike, yellow flower heads, with orange centers, in summer–fall. **H** 8–12in (20–30cm), **S** 12in (30cm).

☼ ◑ Z8–10

Platystemon californicus
(Cream cups)
Moderately fast-growing, upright, compact annual with lance-shaped, grayish-green leaves. Saucer-shaped, cream or pale yellow flowers, about 1in (25cm) across, are borne in summer. **H** 1ft (30cm), **S** 4in (10cm).

☼ 💧 Z8–11

Argemone mexicana
(Devil's fig, Prickly poppy)
Spreading perennial, grown as an annual, with leaves divided into white-marked, grayish-green leaflets. In summer, bears fragrant, poppylike, yellow or orange flowers, 3in (8cm) across. **H** to 2ft (60cm), **S** 1ft (30cm).

☼ 💧 Z8–11

***Calendula officinalis* 'Daisy May'**
Fast-growing, bushy annual with aromatic, lance-shaped, mid-green leaves and numerous, semidouble, yellow flower heads, borne from late spring to fall. **H** and **S** 12–16in (30–40cm).

☼ 💧 Z9–11

***Coreopsis grandiflora* 'Sunray'**
Spreading, clump-forming perennial, grown as an annual by sowing under glass in early spring. Has lance-shaped, serrated leaves and daisylike, double, bright yellow flower heads in summer. **H** 18in (45cm), **S** 12–18in (30–45cm).

☼ 💧 Z4–9

Smyrnium perfoliatum
Slow-growing, upright biennial. Upper leaves, rounded and yellow-green, encircle stems, which bear heads of yellowish-green flowers in summer. **H** 2–3ft (60–100cm), **S** 2ft (60cm).

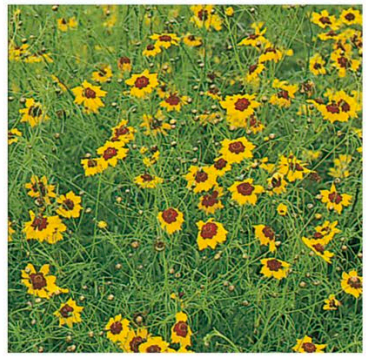
☼ 💧 Z6–10

Cladanthus arabicus
Moderately fast-growing, hummock-forming annual with aromatic, feathery, light green leaves. Produces fragrant, daisylike, single, deep yellow flower heads, 2in (5cm) across, in summer and early fall. **H** 2ft (60cm), **S** 1ft (30cm).

☼ 💧 Z5–10

Eschscholzia caespitosa
Fast-growing, slender, erect annual with feathery, bluish-green leaves. Cup-shaped, 4-petaled, yellow flowers, 1in (25cm) across, are borne in summer and early fall. **H** and **S** 6in (15cm).

☼ 💧 Z8–10



Coreopsis tinctoria (Tick-seed)
Fast-growing, erect, bushy annual with lance-shaped leaves. Large, daisylike, bright yellow flower heads with red centers are produced in summer and early fall. **H** 24–36in (60–90cm), **S** 8in (20cm).

☼ 💧 Z4–9

Limnanthes douglasii
(Meadow foam, Poached-egg flower)
Fast-growing, slender, erect annual. Feathery leaves are glossy, light green; slightly fragrant, cup-shaped, white flowers with yellow centers are borne from early to late summer. **H** 6in (15cm), **S** 4in (10cm).

☼ 💧 Z5–10

***Mimulus* x *hybridus* Magic Series 'Magic Yellow Blotch'**
Erect, well-branched perennial, grown as an annual. Fleshy stems bear small, ovate, toothed, mid-green leaves. In summer, produces flared, tubular flowers in bright yellow heavily blotched in red. **H** and **S** 6–8in (15–20cm).

☼ ◑ Z9–10

***Helianthus annuus* 'Teddy Bear'**
Fast-growing, compact, hairy-stemmed annual with toothed, roughly hairy leaves. Produces daisylike, double, deep yellow flower heads, to 5in (12cm) across, in summer. **H** 36in (90cm), **S** to 2ft (60cm).

☼ ◊ Z2–11 ⓘ

Glebionis segetum
Moderately fast-growing, erect annual with lance-shaped, gray-green leaves. Daisylike, single flower heads, to 3in (8cm) across, in shades of yellow, are borne in summer and early fall. **H** 1½ft (45cm), **S** 1ft (30cm).

☼ ◊ Z9–11

***Calendula officinalis* Pacific Beauty Series 'Lemon Queen'**
Fast-growing, erect annual with softly hairy, aromatic leaves. Daisylike, double, lemon-yellow flower heads, with red-brown disc-florets, are borne in summer–fall. **H** to 1½ft (45cm), **S** 1–1½ft (30–45cm).

☼ ◊ Z9–11

Ursinia anthemoides
Moderately fast-growing, bushy annual with feathery, pale green leaves. Small, daisylike, purple-centered flower heads with orange-yellow rays, purple beneath, are borne in summer and early fall. **H** 1ft (30cm), **S** 8in (20cm).

☼ ◊ Z10–11

***Helianthus annuus* 'Music Box'**
Fast-growing, free-flowering, many-branched, hairy-stemmed annual. Bears daisylike flower heads, 4–5in (10–12cm) across, with ray-florets ranging from creamy-yellow to dark red, and black disc-florets, in summer. **H** 28in (70cm), **S** to 2ft (60cm).

☼ ◊ Z2–11 ⓘ

ORANGE

***Gazania* Daybreak Series**
'Daybreak Bright Yellow'
Spreading perennial, grown as an annual, with narrowly lance-shaped, green leaves. Daisylike, vivid yellow flowers, 3in (7cm) across, with a dark ring around each golden eye, are borne all summer. **H** and **S** 8in (20cm).

☼ ◑ Z8–10

Lysimachia congestiflora
'Outback Sunset'
Mat-forming or trailing perennial. Has lance-shaped, red-tinged, leaves, 2in (5cm) long, irregularly splashed in yellow. Bears clusters of 5-lobed, trumpet-shaped, yellow flowers in summer. **H** 4in (10cm), **S** 1ft (30cm).

☼ ◑ Z6–9

***Begonia* 'Can-can'**
Upright Tuberhybrida begonia with few side shoots. Double, yellow flowers, 8in (20cm) across, with rough-edged, red petals, are borne in summer. **H** 1ft (30cm), **S** 20in (50cm). Min. 5°F (10°C).

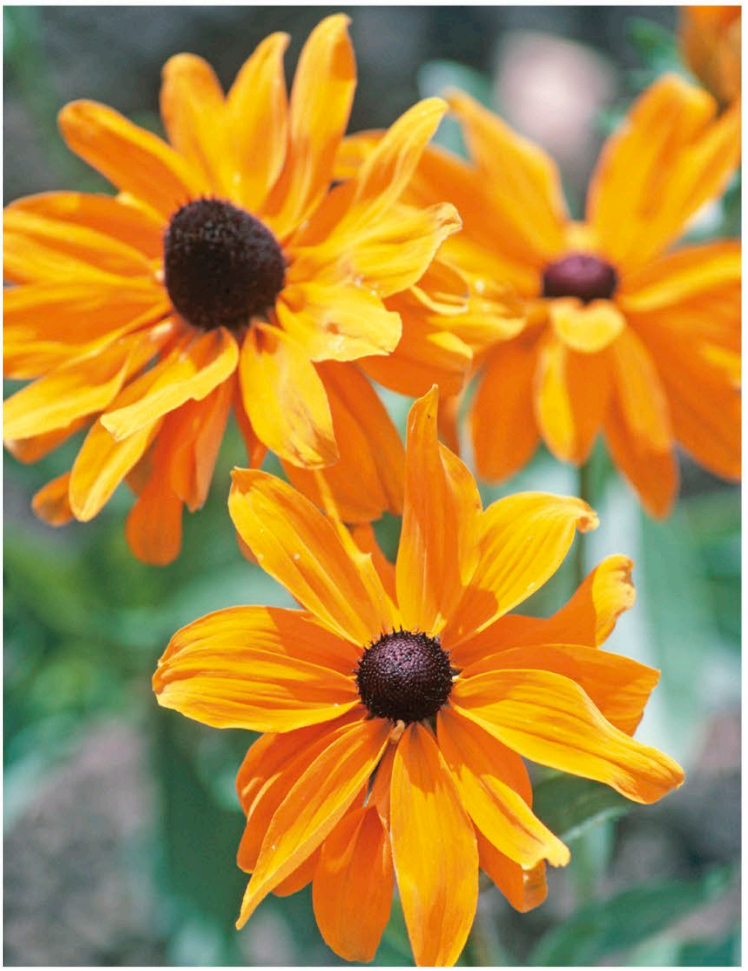
◐ ◑ Z9–11

Carthamus tinctorius (False saffron)
Moderately fast-growing, upright annual with coarse, spine-edged, linear foliage. Produces tufted, thistlelike flowers, surrounded by stiff green bracts, in summer. Suitable for drying.
H and **S** 1–2ft (30–60cm).

☼ ◑ Z3–9

***Tropaeolum majus* Alaska Series**
Fast-growing, bushy annual with rounded, variegated leaves. Spurred, trumpet-shaped flowers, in shades of orange, yellow, mahogany, or cream, are borne in summer and early fall.
H and **S** 1ft (30cm).

☼ ◑ Z10–11



***Rudbeckia hirta* 'Marmalade'**
Moderately fast-growing, erect, branching perennial, grown as an annual, with lance-shaped leaves. In summer–fall, bears daisylike, deep yellow-orange flower heads, 3in (8cm) across, with black centers.
H 1½ft (45cm), **S** 1ft (30cm).

☼ ◑ Z3–7

Erysimum* x *marshallii
'Orange Bedder'
Slow-growing, short-lived, evergreen, bushy perennial, grown as a biennial. Has lance-shaped, mid-green leaves. Heads of scented, 4-petaled, brilliant orange flowers appear in spring. **H** and **S** 1ft (30cm).

☼ ◊ Z3–7

***Lantana* 'Radiation'**
Evergreen, rounded to spreading shrub, often used as a bedding plant, with finely wrinkled, deep green leaves. Rounded, dense heads of tiny, tubular, bicolored orange-red flowers are borne from summer–fall. **H** and **S** 3–6ft (1–2m). Min. 50ºF (10ºC).

☼ ◊ Z11 !

***Tagetes* Boy Series** [orange]
Compact annual that bears double, crested flower heads in a range of colors, including shades of golden-yellow, yellow, orange or reddish-brown, with deep orange or yellow crests, in late spring and early summer. **H** to 6in (15cm), **S** to 1ft (30cm).

☼ ◊ Z2–11 !

***Tithonia rotundifolia* 'Torch'**
Slow-growing, erect annual with rounded, lobed leaves. Has daisylike, bright orange or scarlet flower heads, 2–3in (5–7cm) wide, in summer and early fall. **H** 3ft (90cm), **S** 1ft (30cm).

☼ ◊ Z10–11

***Gazania* Kiss Series**
'Kiss Orange Flame'
Spreading perennial, grown as an annual, with long, narrowly lance-shaped, dark green leaves. All summer produces daisylike, orange flowers, 3in (7.5cm) across, with mahogany-striped petals. **H** and **S** 8in (20cm).

☼ ◑ Z10–11

***Abutilon pictum* 'Thompsonii'**
Robust, evergreen, upright shrub with 3–5-lobed, serrated, rich green, heavily yellow-mottled leaves. Yellow-orange flowers with crimson veins are borne from summer to fall. **H** 15ft (5m), **S** 6–15ft (2–5m). Min. 41–5ºF (5–7ºC).

☼ ◊ Z8–10

***Lantana* 'Spreading Sunset'**
Evergreen, rounded to spreading shrub, often used as bedding. Has deep green, finely wrinkled leaves. In spring-fall, bears rounded, dense heads of tiny, tubular, orange-yellow flowers, taking on reddish-pink tints with age. **H** and **S** 3–6ft (1–2m). Min. 50ºF (10ºC).

☼ ◊ Z11 !

***Impatiens* Fusion Series**
FUSION PEACH FROST ('Balfuspeafro')
Evergreen, bushy perennial, grown as an annual, with elliptical, pale green leaves margined in cream. Cupped, 5-petaled, apricot flowers, ⅝in (1.5cm) across, are borne in summer. **H** and **S** 10–16in (25–40cm). Min. 50°F (10°C).

☼ ◑ Z10–11

***Rudbeckia hirta* 'Goldilocks'**
Moderately fast-growing, erect, branching perennial, grown as an annual. Has lance-shaped leaves and daisylike, double or semidouble, golden-orange flowers, 3in (8cm) across, in summer–fall. **H** 2ft (60cm), **S** 1ft (30cm).

☼ ◑ Z3–7

Calendula officinalis
Fiesta Gitana Group
Fast-growing, bushy annual with strongly aromatic, lance-shaped, pale green leaves. Daisylike, double flower heads, ranging from cream to orange in color, are carried from spring to fall. **H** and **S** 1ft (30cm).

☼ ◑ Z9–11

***Zinnia marylandica* Zahara Series**
'Fire'
Mound-forming, bushy, disease-resistant annual with ovate, mid-green leaves. Bright orange flowers, 2–3in (5–7cm) across, with orange centers, are borne in summer. **H** 12–18in (30–45cm), **S** 16–24in (40–60cm). Min. 41°F (5°C).

☼ ◑ Z9–11

***Tagetes* Gem Series 'Tangerine Gem'**
Fast-growing, bushy annual with aromatic, feathery leaves. Small, single, deep orange flower heads are borne in summer and early fall.
H 8in (20cm), **S** 1ft (30cm).

☼ ◊ Z8–11 ⓘ

***Coreopsis* 'Rum Punch'**
Bushy, rather spreading, prolific but short-lived perennial, grown as an annual. Slender stems have divided, dark green leaves and in summer–fall bear daisylike, coppery-pink flower heads, 1½in (3.5cm) across.
H 18in (45cm), **S** 2ft (60cm).

☼ ◑ Z10–11

***Dahlia* Dahlietta Series 'Surprise Kelly'**
Compact, bushy, well-branched, tuberous perennial, grown as an annual. Has pointed-ovate, toothed leaves and, in summer, bears flat heads of daisylike, golden-yellow flowers, very heavily speckled with dark orange. **H** 10–12in (25–30cm), **S** 14–16in (35–40cm).

☼ ◊ Z9–11

Eschscholzia californica
(California poppy)
Fast-growing, slender, erect annual with feathery, bluish-green leaves. Cup-shaped, 4-petaled, vivid orange-yellow flowers are borne in summer–fall.
H 1ft (30cm), **S** 6in (15cm).

☼ ◊ Z11

***Erysimum cheiri* 'Fire King'**
Moderately fast-growing, evergreen, bushy perennial, grown as a biennial. Lance-shaped leaves are mid- to deep green. Heads of 4-petaled, reddish-orange flowers are produced in spring.
H 15in (38cm), **S** 12–15in (30–38cm).

☼ ◊ Z3–7

Emilia coccinea (Flora's paintbrush)
Moderately fast-growing, upright annual with lance-shaped, grayish-green leaves and double, red or yellow flower heads in summer. **H** 1–2ft (30–60cm), **S** 1ft (30cm).

☼ ◊ Z8–11

Begonia sutherlandii
Trailing, tuberous begonia with slender stems and small, lance-shaped, lobed, bright green leaves with red veins. Bears profuse, loose clusters of single, orange flowers in summer. Excellent for a hanging basket. **S** 18in (45cm).

◐ ◊ Z8–10

Tropaeolum majus **Jewel Series**
Fast-growing, bushy annual with rounded leaves. Spurred, trumpet-shaped flowers, in shades of red, yellow, or orange, are held well above leaves from early summer to early fall. **H** and **S** 1ft (30cm). Min. 41°F (5°C).

☼ ◊ Z11–12

Dahlia **'Hamari Gold'**
Bushy, well-branched, tuberous perennial, grown as an annual. Has pointed-ovate, toothed leaves and produces giant, orange-bronze flowers from summer to fall. **H** 3½ft (1.1m), **S** 2ft (60cm).

☼ ◊ Z8–11

Eschscholzia californica
Thai Silk Series
Fast-growing, compact, slender, erect annual with feathery, bluish-green leaves. In summer–fall, produces single or semidouble, fluted, bronze-tinged flowers in red, pink, or orange. **H** 8–10in (20–25cm), **S** 6in (15cm).

☼ ◊ Z6–10

Gaillardia x grandiflora
Arizona Series
Bushy, compact, short-lived perennial, with soft, divided leaves. Large, daisylike flower heads in shades of orange and red, with yellow-tipped ray florets, are borne from summer to fall. **H** to 36in (90cm), **S** 18in (45cm).

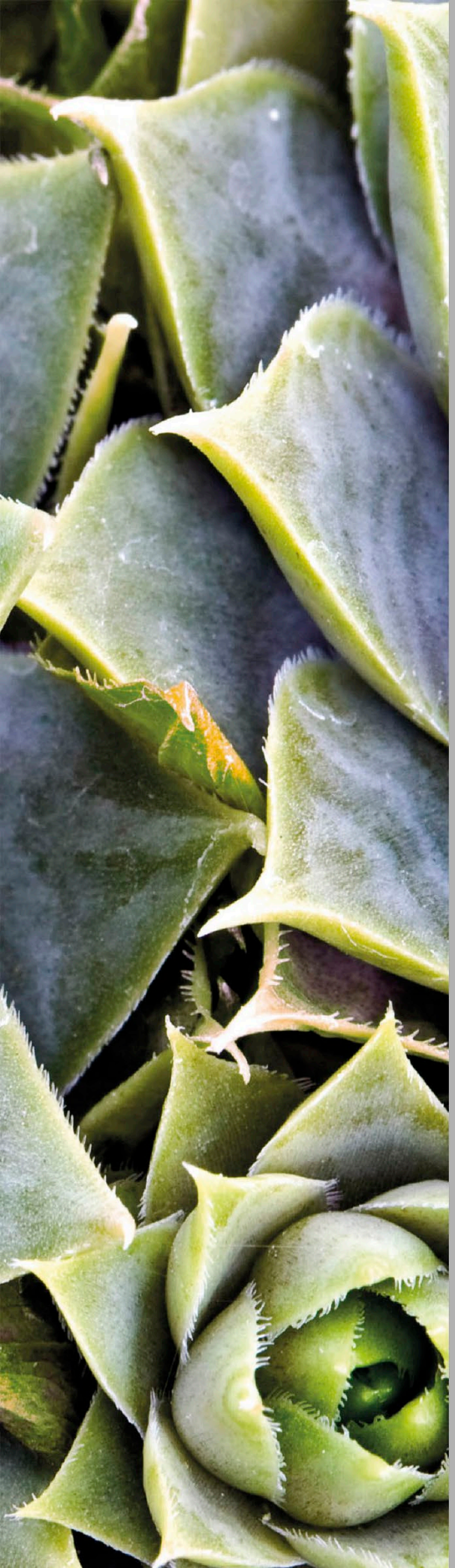
☼ ◊ Z3–10

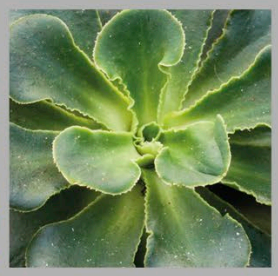
Dahlia **'Dandy'**
Well-branched, erect, bushy, tuberous perennial, grown as an annual. Has pointed-ovate, serrated leaves and heads of daisylike flowers, with contrasting central collars of quilled petals, in shades of red, yellow, or orange in summer. **H** and **S** 2ft (60cm).

☼ ◊ Z9–11

Solanum pseudocapsicum **'Balloon'**
Evergreen, bushy shrub, grown as an annual. Has lance-shaped leaves and, in summer, small, star-shaped, white flowers. Large, cream fruits turn orange in winter. **H** 1ft (30cm), **S** 1–1½ft (30–45cm). Min. 41°F (5°C).

☼ ◊ Z11–12 ⓘ





ROCK PLANTS

Rock plants are prized for their natural charm, foliage forms, and, in many cases, masses of colorful flowers in spring and summer. Grow them in areas that mimic the conditions in which they thrive in the wild, which are usually exposed sites with stony, rapidly draining soils. As long as they have sharp drainage and protection from excessive winter moisture, you can grow rock plants in small gardens in a trough or container, or where there is more space, in a rock garden or scree bed. If the soil in your garden is unsuitable, you can also grow these ground-hugging plants in raised beds to create landscapes in miniature. Raised beds also have the advantage of bringing the small plants closer to eye level so that you can admire their tiny, delicate features in more detail.

ROCK PLANTS

The delicate flowers and foliage of many rock plants belie their tough nature, withstanding the burning sun and harsh winds typical of their alpine habitats. They make excellent plants for the garden, and are perfect for rock and scree gardens, wall crevices, troughs, and pots.

SIZE CATEGORIES USED WITHIN THIS GROUP		
Large over 6in (15cm)	Medium ———	Small up to 6in (15cm)

What are rock plants?

The term rock plants includes bulbs and mat- and cushion-forming perennials—many of which are evergreen—as well as dwarf conifers and both evergreen and deciduous shrubs. Some are true alpines from mountain regions, while others are simply compact plants suitable for rock-garden planting schemes. While some alpines have specialized needs, many species and cultivars, including aubrietas and geraniums, are easy to grow and thrive in any well-drained soil and sunny site.

True alpines are found at high altitudes above the tree line on mountains, growing on scree slopes, in short turf, or finding protection from the wind by squeezing into rock crevices. Subalpine plants live below the tree line on rocky slopes or in high pastures or meadows. Most alpines are compact in habit and frequently deep-rooting, usually with small leaves that are leathery, fleshy, or covered in fine hair. These adaptations help them survive the drying, high-velocity winds, brilliant, burning sun, and extreme temperature fluctuations of their natural habitats.

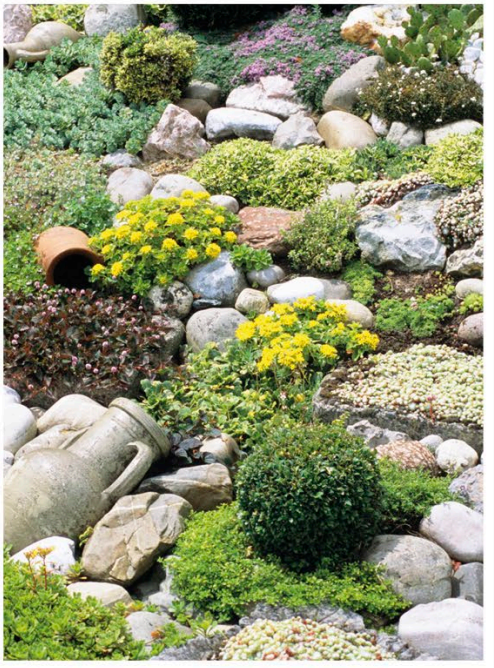
Most rock plants grow in areas that have stony soil with rapid drainage, which explains why few can cope with wet soil around the roots, which is experienced at lower altitudes. They also dislike warm, humid summers.

In the wild, high-growing species are insulated from winter cold by a blanket of snow, beneath which they remain dormant at temperatures around 32°F (0°C) until spring. Those environments that mimic conditions in the wild, such as rock gardens, scree and gravel beds, troughs, pots, raised beds, and open frames, are therefore ideal for growing rock plants. You can grow alpines successfully even in areas where the soil is unsuitable by filling raised beds, pots, and troughs with free-draining soil and horticultural grit.

Designing with rock plants

One of the major attractions of this group is their diminutive size, which allows you to grow a huge number of different plant types in a relatively confined space.

In a rock garden—as in larger-scale plantings—use small shrubs, such as the highly fragrant *Daphne cneorum* and *D. retusa* or the catkin-bearing *Salix bockii* and *S. apoda*, to form the structural framework of your design. Miniature conifers, such as *Juniperus communis* 'Compressa', provide vertical accents and year-round color, and work well in combination with the contrasting forms of rounded or domed plants, such as the evergreen *Hebe cupressoides* 'Boughton Dome' and *Cassiope lycopodioides*. This structure can then be filled in with mat- and cushion-forming plants, such as sandworts (*Arenaria*) or *Dianthus deltoides*,



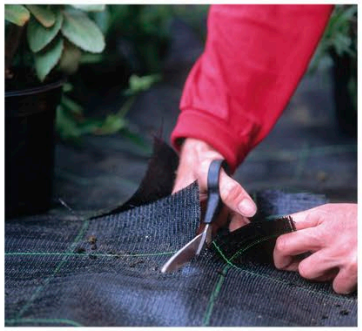
ABOVE **Mediterranean mountains**
Recreate a Mediterranean alpine scene with clay pots and pebbles decorating beds that include a range of sedums, hylotelephiums, saxifrages, thymes, and arabis, with clipped boxwood balls providing structure.

LEFT **Colorful tapestry**
Siting a rock garden on a gentle slope assists rapid drainage, while an open, sunny site is perfect for alpines. Choose plants with contrasting forms, such as teardrop-shaped, upright conifers and mats of colorful blooms.

PLANTING A GRAVEL OR SCREE GARDEN

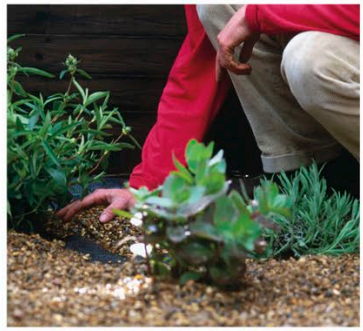
Gravel gardens are ideal for alpines and rock plants. Stones can be worked into a scheme to create a rock garden, or a variety of rock and stone sizes used on a slope to form a natural scree. A gravel or slate chip mulch helps keep the plant leaves and stems dry, and prevents rotting, but lay weed-suppressing fabric over the ground first. This excludes light and stops weed seeds from germinating, but still allows moisture through to the plant.

A weed-free gravel garden



1 Lay the fabric
Measure your bed, and buy sufficient weed-suppressing fabric to cover it. Overlap the edges when joining two pieces together. Cut crosses where you plan to plant.

2 Plant up
Fold back the flaps, and dig a hole, putting the excavated soil on a plastic sheet. Insert the plant, water in, and backfill with soil. Firm in and replace the flaps around the plant stems.



3 Add gravel mulch
Trim the fabric around the stems and continue to plant in this way. When the bed is planted, spread a 2–3in (5–8cm) layer of gravel over the fabric and around each plant.

at the feet of slightly taller, feathery-leaved pulsatillas or the airy *Linum narbonense*. As well as shape and form, use contrasting textures. You could include the almost bead-like foliage of certain hylotelephiums and sedums, spiky houseleek (*Sempervivum*) rosettes, and the pointy-tipped gray leaves of *Euphorbia myrsinites*, which would make eye-catching partners for the white-haired leaves of edelweiss (*Leontopodium*) or the silky, silver leaves of celmisias.

Most alpines like an open, sunny site and will not thrive if shaded by over-hanging trees or neighboring plants. Plant them with space to spread and use a dry mulch, such as gravel, to keep the stems and leaves dry at all times. Mulches also act as a foil for the plants.

If you have limited space, plant a selection of alpines in small pots filled with gritty potting mix. Many plants in this group are drought-tolerant and thrive in containers, and when grouped together make colorful displays. Troughs can be given a modern makeover by planting alpines between slate chips (*see box right*), or using a ground glass or shell mulch.

Raised beds offer another design option for those with small gardens. They are also useful for people with reduced mobility, allowing them to access the plants more easily. Use raised beds to create miniature landscapes with plants spreading between rocks and pebbles. Dry stone walls offer ideal sites for many crevice-lovers, such as aubretias and sedums, while cascading alpines, such as *Saxifraga* 'Tumbling Waters', are perfect for the tops of walls.

Year-round interest

Many alpines flower in spring and early summer, just after the snow melts and before the heat of midsummer in their natural habitat. For color earlier in the year, plant spring bulbs, such as alpine narcissus or crocuses, among evergreen perennials, conifers, and small shrubs. The choice of flowers at the peak flowering times is vast, so coordinate your color schemes for a dramatic performance. Hot colors, such as the bright yellow sedums and wallflowers (*Erysimum*) and scarlet and orange helianthemums, create highlights against more subdued blues and purples. As the summer progresses, select later-flowering rock plants, including phlox, crepis, and diascias, followed by the pink *Silene schafta*, gentians, and berry-bearing gaultherias in the fall.

PLANTING A SLATE-FILLED TROUGH

Topped with slate chips, this decorative trough mirrors a natural mountain scree, and provides a long season of color in spring and summer. Plants included in this display are *Draba* species, erigerons, saxifrages, *Silene acaulis*, and *Townsendia grandiflora*. However, any small alpines that have different leaf textures and flower colors will work equally well. Move your trough to its final position before you start, as it will be very heavy once planted.

1 Prepare the trough
Cover the drainage holes at the base of the trough with crocks. Add a 2in (5cm) layer of gravel. Fill up the trough with equal parts of soil-based potting mix and sand, to 2in (5cm) from the top.

2 Add slates and plants
Push the slate chips vertically into the soil, leaving spaces for the alpines. Water the plants, and plant them into the gaps, making sure the roots are covered with the sand and potting mix blend. Water well.

Leontopodium nivale* subsp. *alpinum (Edelweiss)
Short-lived perennial with lance-shaped, woolly leaves. Small, silvery-white flower heads, borne in spring or early summer, are surrounded by petal-like, felted bracts in a star shape. Dislikes wet. **H** and **S** 6–8in (15–20cm).

☼ ◊ Z4–6

Lithophragma parviflorum
Clump-forming, tuberous perennial that bears small, open clusters of campion-like, white or pale pink flowers in spring above a basal cluster of deeply toothed, kidney-shaped leaves. Lies dormant in summer. **H** 6–8in (15–20cm), **S** to 8in (20cm).

◐ ◊ Z4–6

Saxifraga granulata (Fair maids of France, Meadow saxifrage)
Clump-forming perennial that loses its kidney-shaped, crumpled, glossy leaves in summer. Sticky stems bear loose panicles of rounded, white flowers in late spring. **H** 9–15in (23–38cm), **S** to 6in (15cm) or more.

◐ ◊ Z7–8

Iberis sempervirens
Evergreen, spreading subshrub, with narrow, oblong, dark green leaves, bearing dense, rounded heads of white flowers in late spring and early summer. Trim after flowering. **H** 6–12in (15–30cm), **S** 1½–2ft (45–60cm).

☼ ◊ Z5–9

Pulsatilla alpina (Alpine anemone)
Tufted perennial with feathery leaves. Bears upright, or nodding, cup-shaped, white, sometimes blue- or pink-flushed flowers singly in spring and early summer, then feathery seed heads. **H** 6–12in (15–30cm), **S** to 4in (10cm).

☼ ◊ Z5–7 ⓘ

Rhodanthemum hosmariense
Evergreen, shrubby perennial with finely cut, bright silvery-green leaves that clothe lax, woody stems. From late spring to early fall, white flower heads are borne singly above foliage. **H** 6in (15cm) or more, **S** 1ft (30cm).

☼ ◊ Z9–11

***Andromeda polifolia* 'Alba'**
Evergreen, open, twiggy shrub bearing terminal clusters of pitcher-shaped, white flowers in spring and early summer. Glossy, dark green leaves are leathery and lance-shaped. **H** 1½ft (45cm), **S** 2ft (60cm).

◐ ◊ pH Z2–6

***Cassiope* 'Muirhead'**
Evergreen, loose, bushy shrub with scalelike, dark green leaves on upright branches. In spring, these bear tiny, virtually stemless, bell-shaped, white flowers along their length. **H** and **S** 8in (20cm).

◐ ◊ pH Z2–6

Cassiope tetragona
Evergreen, upright shrub with dense, scalelike, dark green leaves concealing branched stems. In spring, leaf axils bear solitary pendent, bell-shaped, white flowers in red calyces. **H** 4–10in (10–25cm), **S** 4–6in (10–15cm).

◐ ◊ pH Z2–7

Jeffersonia diphylla
Slow-growing, tufted perennial with distinctive, 2-lobed, light to mid-green leaves. Bears solitary cup-shaped, white flowers with prominent, yellow stamens in late spring. Do not disturb roots.
H 6–9in (15–23cm), **S** to 9in (23cm).

☀ ◑ Z5–7

Daphne blagayana
Evergreen, prostrate shrub with trailing branches each bearing a terminal cluster of ovate, leathery leaves and, in early spring, dense clusters of fragrant, tubular, white flowers. Likes humus-rich soil. **H** 12–16in (30–40cm), **S** 24–32in (60–80cm) or more.

◐ ◑ Z7–9 ⓘ

Tiarella cordifolia (Foamflower)
Vigorous, evergreen, spreading perennial. Lobed, pale green leaves sometimes have darker marks; veins turn bronze-red in winter. Bears many spikes of profuse white flowers in late spring and early summer. **H** 6–8in (15–20cm), **S** to 1ft (30cm) or more.

◐ ◑ Z3–8

***Saxifraga* 'Tumbling Waters'**
Slow-growing, evergreen, mat-forming perennial with a tight rosette of narrow, lime-encrusted leaves. After several years, produces arching sprays of white flowers in conical heads; main rosette then dies but small offsets survive.
H to 2ft (60cm), **S** to 8in (20cm).

☀ ◑ Z6–7

Daphne alpina
Compact and upright deciduous shrub with softly hairy, ovate, gray-green leaves. In late spring, produces terminal clusters of small, white flowers that are sweetly scented. These are followed by spherical, orange-red fruits. **H** and **S** to 2ft (60cm).

◐ ◑ Z6–8 ⓘ

Dodecatheon meadia* f. *album
Clump-forming perennial with basal rosettes of ovate, pale green leaves. In spring, strong stems bear several white flowers with dark centers and reflexed petals. Lies dormant in summer.
H 8in (20cm), **S** 6in (15cm).

◐ ◑ Z4–8

***Andromeda polifolia* 'Compacta'**
Evergreen, compact, twiggy shrub that bears delicate, terminal clusters of pitcher-shaped, coral-pink flowers, with white undertones, in spring and early summer. Leaves are lance-shaped and glossy, dark green. **H** 6–9in (15–23cm), **S** 12in (30cm).

☀ ◑ pH Z2–6

Dodecatheon hendersonii
Clump-forming perennial with a flat rosette of kidney-shaped leaves, above which deep pink flowers with reflexed petals are borne in late spring. Needs a dry, dormant summer period. **H** 1ft (30cm), **S** 3in (8cm).

☀ ◑ Z5–7

***Phyllodoce* x *intermedia* 'Drummondii'**
Evergreen, bushy, dwarf shrub with narrow, heatherlike, glossy leaves. From late spring to early summer, produces terminal clusters of pitcher-shaped, rich pink flowers on slender, red stalks. **H** and **S** 9in (23cm).

☀ ◑ pH Z3–7

Daphne cneorum
Evergreen, low-growing shrub with trailing branches clothed in small, ovate, leathery, dark green leaves. Fragrant, deep rose pink flowers are borne in terminal clusters in late spring. Prefers humus-rich soil. **H** 9in (23cm), **S** to 6ft (2m).

☀ ◑ Z5–7 ⓘ

***Dodecatheon pulchellum* subsp. *pulchellum* 'Red Wings'**
Clump-forming perennial with a basal cluster of oblong, soft, pale green leaves. In late spring and early summer, bears small clusters of deep magenta flowers, with reflexed petals, on strong stems.
H 8in (20cm), **S** 4in (10cm).

☀ ◑ Z4–7

PINK

Phyllodoce empetriformis
Evergreen, mat-forming shrub with fine, narrow, heatherlike leaves and terminal clusters of bell-shaped, purplish-pink flowers in late spring and early summer. **H** 6–9in (15–23cm), **S** 8in (20cm).

☼ ◑ pH Z3–6

Phyllodoce caerulea
Evergreen, dwarf shrub with fine, narrow, heatherlike leaves. Bears bell-shaped, purple to purplish-pink flowers, singly or in clusters, in late spring and summer. **H** and **S** to 12in (30cm).

☼ ◑ pH Z2–5

***Daphne* x *hendersonii* 'Blackthorn Rose'**
Evergreen, domed shrub with glossy, dark green leaves, to 1in (25cm) long. In spring, produces numerous, rounded deep red-purple buds that open to very fragrant, pink flowers with spreading lobes. **H** 8–12in (20–30cm), **S** 18in (45cm).

☼ ◊ Z3–7 !

PURPLE

Pulsatilla halleri
Tufted perennial, intensely hairy in all parts, that in spring bears nodding, later erect, cup-shaped flowers in shades of purple. Has feathery leaves and seed heads. **H** 6–15in (15–38cm), **S** 6–8in (15–20cm).

☼ ◊ Z5–7 !

Pulsatilla vulgaris (Pasque flower)
Tufted perennial with feathery, light green leaves. In spring, bears nodding, cup-shaped flowers, in shades of purple, red, pink or white, with bright yellow centers. Flower stems rapidly elongate as feathery seeds mature. **H** and **S** 6–9in (15–23cm).

☼ ◊ Z5–7 !

Erinacea anthyllis (Hedgehog broom)
Slow growing, evergreen subshrub with hard, blue-green spines. Pealike, soft lavender flowers are produced in axils of spines in late spring to early summer. **H** and **S** 6–10in (15–25cm).

☼ ◊ Z7–8

BLUE

Aquilegia alpina (Alpine columbine)
Short-lived, upright perennial with spurred, clear blue or violet-blue flowers on slender stems in spring and early summer. Has basal rosettes of rounded, finely divided leaves. Needs rich soil. **H** 18in (45cm), **S** 6in (15cm).

☼ ◊ Z4–7 !

Omphalodes verna
Semievergreen, clump-forming perennial that in spring bears long, loose sprays of flat, bright blue flowers with white eyes. Leaves are ovate and mid-green. **H** and **S** 8in (20cm) or more.

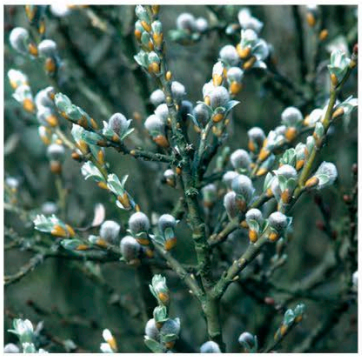
☀ ◑ Z6–9

Omphalodes cappadocica
Spreading perennial with creeping underground stems and many loose sprays of flat, bright blue flowers in spring-summer above tufts of ovate, hairy, basal leaves. **H** 6–8in (15–20cm), **S** 10in (25cm) or more.

☼ ◑ Z6–8

Corydalis cheilanthifolia
Evergreen perennial with fleshy roots. Produces spreading rosettes of fern-like, near-prostrate, sometimes bronze-tinted, mid-green leaves. Bears dense spikes of short-spurred, yellow flowers in late spring and early summer. **H** 8–12in (20–30cm), **S** 6–8in (15–20cm).

☼ ◊ Z5–7



Salix helvetica
Deciduous, spreading, much-branched, dwarf shrub that has small, ovate, glossy leaves, white-haired beneath. In spring, bears short-stalked, silky, gray, then yellow catkins. **H** 24in (60cm), **S** 12in (30cm).

☼ ◑ Z5–8

Umbilicus oppositifolius
Evergreen, trailing perennial with large, oblong, serrated, succulent leaves. In late spring and early summer, bears many tiny, yellow flowers in arching sprays. **H** 6–8in (15–20cm), **S** 6in (15cm).

☀ ◊ Z6–9

***Aurinia saxatilis* 'Citrina'**
Evergreen, clump-forming perennial with ovate, hairy, gray-green leaves. Bears racemes of many, small, pale lemon-yellow flowers in late spring and early summer. **H** 9in (23cm), **S** 12in (30cm).

☼ ◊ Z4–8

Corydalis wilsonii
Evergreen perennial with a fleshy rootstock. Forms rosettes of near-prostrate, divided, bluish-green leaves. Loose racemes of spurred, green-tipped, yellow flowers are produced in spring. **H** and **S** 4–10in (10–25cm).

☼ ◊ Z6–7

Cytisus* x *beanii
Deciduous, low-growing shrub with arching sprays of pealike, golden-yellow flowers that are borne in late spring and early summer on previous year's wood. Leaves, divided into 3 leaflets, are small, linear and hairy. **H** 6–16in (15–40cm), **S** 12–30in (30–75cm).

☼ ◊ Z7–8 ⓘ

***Aurinia saxatilis* 'Variegata'**
Evergreen perennial that produces racemes of many small, yellow flowers in spring above a mat of large, ovate, soft gray-green leaves with cream margins. **H** 9in (23cm), **S** 12in (30cm).

☼ ◊ Z4–8

Hylomecon japonica
Vigorous, spreading perennial with large, cup-shaped, bright yellow flowers that are borne singly on slender stems in spring. Soft, dark green leaves are divided into 4 unequal lobes. **H** to 12in (30cm), **S** 8in (20cm).

☼ ◑ Z5–8

***Erysimum* 'Moonlight'**
Mat-forming, evergreen perennial with narrowly ovate leaves. In early summer, produces clusters of pale, sulfur-yellow flowers on short, leafy stems. Prefers an open site and gritty soil. **H** 10in (25cm), **S** 18in (45cm).

☼ ◊ Z6–8

Aurinia saxatilis (Basket of gold, Gold dust)
Evergreen perennial forming low clumps of ovate, hairy, gray-green leaves. Bears substantial spikes of small, chrome-yellow flowers in spring. **H** 9in (23cm), **S** 12in (30cm).

☼ ◊ Z4–8

***Erysimum* 'Bredon'**
Semievergreen, rounded, woody perennial clothed in ovate, dark green leaves. In late spring, bears dense spikes of flat, bright mustard-yellow flowers. **H** 12–18in (30–45cm), **S** 18in (45cm).

☼ ◊ Z5–8

***Erysimum cheiri* 'Harpur Crewe'**
Evergreen, shrubby perennial with stiff stems and narrow leaves. Fragrant, double, deep yellow flowers open in succession from late spring to midsummer. Grows best in poor soil and a sheltered site. **H** and **S** 12in (30cm).

☼ ◊ Z5–8

***Berberis* x *stenophylla* 'Corallina Compacta'**
Evergreen, neat, dwarf shrub with spiny stems clothed in small, narrowly ovate leaves. In late spring, bears many tiny, bright orange flowers. Slow-growing and can be difficult to propagate. **H** and **S** to 10in (25cm).

☼ ◊ Z6–9 ⓘ

Parnassia palustris
(Grass of Parnassus)
Perennial with low, basal tufts of heart-shaped, pale to mid-green leaves. Bears saucer-shaped, white flowers, with dark green or purplish-green veins, on erect stems in late spring and early summer. **H** 8in (20cm), **S** 2½in (6cm) or more.

☼ ◊ Z4–11

Armeria pseudarmeria
Evergreen, clump-forming perennial with large, spherical heads of white flowers occasionally suffused pink; these are borne in summer on stiff stems above long, narrow, glaucous leaves. **H** and **S** 12in (30cm).

☼ ◊ Z6–7

Celmisia walkeri
Evergreen, loose, spreading perennial with long, ovate or lance-shaped leaves, glossy, green above and hairy, white beneath. Bears large, daisylike, white flower heads in summer. **H** 9in (23cm), **S** to 6ft (2m).

☼ ◊ pH Z9–10

Helianthemum apenninum
Evergreen, spreading, much-branched shrub that bears saucer-shaped, pure white flowers in midsummer. Stems and small, linear leaves are covered in white down. **H** and **S** 18in (45cm).

☼ ◊ Z6–8

Galax urceolata
Evergreen, clump-forming perennial. Large, round, leathery, mid-green leaves on slender stems turn bronze in fall-winter. Bears dense spikes of small, white flowers in late spring and early summer. **H** 6–8in (15–20cm), **S** to 12in (30cm).

☀ ◊ pH Z5–8

Saxifraga callosa
Evergreen, tightly rosetted perennial with long, linear, stiff, lime-encrusted leaves and, in early summer, upright, then arching, panicles of star-shaped, red-spotted white flowers. Rosettes die after flowering. Suits a rock pocket. **H** 10in (25cm), **S** to 8in (20cm).

☼ ◊ Z7–8

Chamaecytisus purpureus* f. *albus
Deciduous, low-growing shrub with semierect stems clothed in leaves, divided into 3 leaflets. A profusion of pealike, white flowers are borne in early summer on previous year's wood. **H** 18in (45cm), **S** 24in (60cm).

☼ ◊ Z6–9

***Diascia* ICE CRACKER ('Hecrack')**
Mat-forming perennial with narrowly ovate, mid to dark green leaves. From summer to fall, produces upright racemes of 2-lipped, hooded, shallowly bell-shaped, spurred, white flowers, touched pink at the base. **H** 12in (30cm), **S** 6–8in (5–20cm).

☼ ◊ Z8–9

Saxifraga cuneifolia
Evergreen, carpeting perennial with neat rosettes of rounded leaves. In late spring and early summer, bears panicles of tiny, white flowers, frequently with yellow, pink, or red spots, on slender stems. **H** 6–8in (15–20cm), **S** 12in (30cm) or more.

◑ ◊ Z5–7

***Hebe pinguifolia* 'Pagei'**
Evergreen, semiprostrate shrub with small, oblong, slightly cupped, intensely glaucous leaves. Bears short spikes of small, white flowers in late spring or early summer. Excellent groundcover or rock cover. **H** 16–12in (5–30cm), **S** 24in (60cm).

☼ ◊ Z8–10

Hebe vernicosa
Evergreen, bushy, compact shrub with small, ovate, glossy, dark green leaves densely packed on stems. In early and mid-summer, spikes of small, 4-lobed, white flowers are freely produced. **H** 2ft (60cm), **S** 4ft (1.2m).

☼ ◊ Z9–10

Corydalis ochroleuca of gardens
Evergreen, clump-forming perennial with fleshy, fibrous roots and much divided, basal, gray-green leaves. Bears slender, yellow-tipped, creamy-white flowers in late spring and summer. **H** and **S** 8–12in (20–30cm).

☼ ◊ Z6–8

Aethionema grandiflorum
(Persian stone cress)
Short-lived, evergreen or semievergreen, lax shrub. Bears tiny, pale to deep rose-pink flowers in loose sprays in spring–summer. Blue-green leaves are narrow and lance-shaped. **H** 12in (30cm), **S** 9in (23cm).

☼ ◊ Z5–7

Rhodothamnus chamaecistus
Evergreen, low-growing, dwarf shrub with narrow, ovate leaves, edged with bristles. In late spring and early summer, bears cup-shaped, rose- to lilac-pink flowers, with dark stamens, in leaf axils. **H** 6–8in (15–20cm), **S** to 10in (25cm).

☼ ◊ pH Z7–9

Phuopsis stylosa
Low-growing perennial with whorls of pungent, pale green leaves and rounded heads of small, tubular, pink flowers in summer. Good grown over a bank or large rock. **H** 12in (30cm), **S** 12in (30cm).

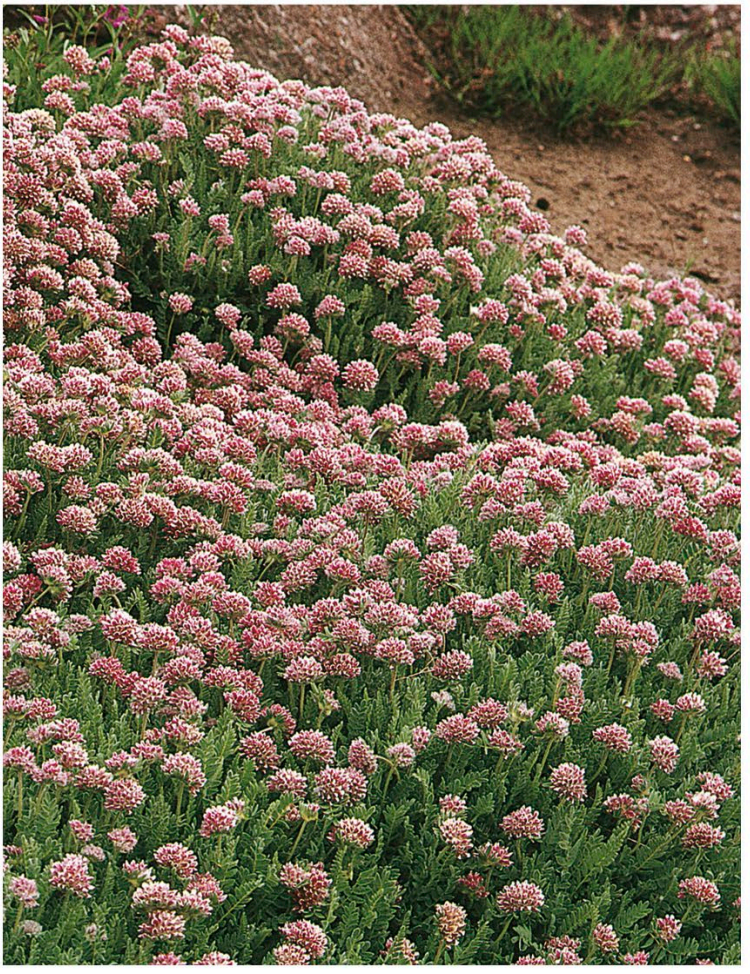
☼ ◊ Z5–8

***Lewisia* 'George Henley'**
Evergreen, clump-forming perennial with rosettes of narrow, fleshy, dark green leaves. Bears dense sprays of open cup-shaped, deep pink flowers, with magenta veins, from late spring to late summer. **H** 6in (15cm) or more, **S** 4in (10cm).

◑ ◊ pH Z7–9

***Saxifraga* Southside Seedling Group**
Evergreen, mat-forming perennial, with large, pale green rosettes of leaves, dying after flowering. In late spring and early summer, bears arching panicles of open cup-shaped, white flowers, strongly red-banded within. **H** and **S** to 12in (30cm).

☼ ◊ Z4–6



Anthyllis montana
Rounded, bushy or somewhat spreading perennial with loose branches and finely cut foliage. Heads of cloverlike, pale pink flowers with red markings are borne in late spring and early summer. **H** and **S** 12in (30cm).

☼ ◊ Z6–8

***Helianthemum* 'Rhodanthe Carneum'**
Evergreen, lax shrub with saucer-shaped, soft, pale pink flowers with orange centers borne for a long period in summer. Has oblong, gray-green leaves. **H** and **S** 12in (30cm) or more.

☼ ◊ Z6–8

Onosma alborosea
Semievergreen, clump-forming perennial covered in fine hairs, which may irritate skin. Clusters of long, pendent, tubular flowers, borne for a long period in summer, open white and then turn pink. **H** 6–12in (15–30cm), **S** 8in (20cm).

☼ ◊ Z7–9

Oxalis tetraphylla
Tuft-forming, tuberous perennial with brown-marked, basal leaves, usually divided into 4 leaflets. Produces loose sprays of widely funnel-shaped, deep pink flowers in late spring and summer. Needs shelter. **H** 6–12in (15–30cm), **S** 4–6in (10–15cm).

☼ ◊ Z8–9

***Origanum* 'Kent Beauty'**
Prostrate perennial with trailing stems clothed in aromatic, rounded-ovate leaves. In summer, bears short spikes of tubular, pale pink flowers with darker bracts. Suitable for a wall or ledge.
H 6–8in (15–20cm), **S** 12in (30cm).

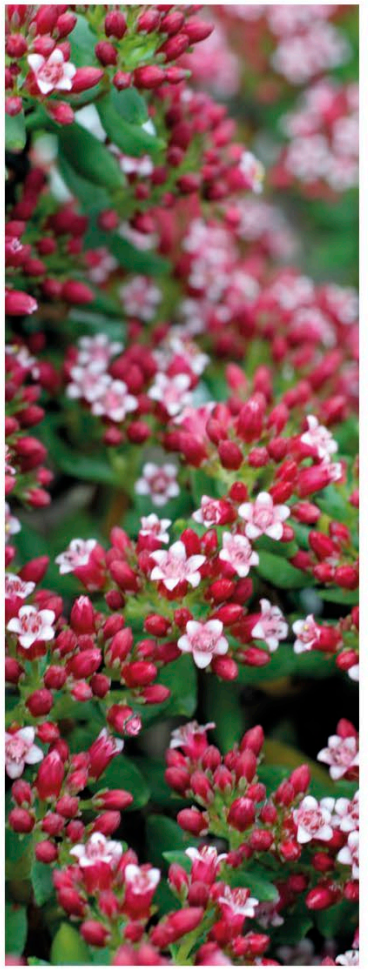
☼ ◊ Z5–8

***Astilbe* x *crispa* 'Perkeo'**
Erect, compact perennial bearing small plumes of tiny, salmon-pink flowers from mid- to late summer on fine stems. Has stiff, deeply cut, crinkled leaves.
H 6–8in (15–20cm), **S** 4in (10cm).

◐ ◊ Z4–9

***Diascia barberae* 'Fisher's Flora'**
Prostrate perennial with stems clothed in heart-shaped, pale green leaves. Bears terminal clusters of spurred, flat-faced, bright pink flowers in summer and early fall. **H** 6–8in (15–20cm), **S** 8in (20cm).

☼ ◊ Z8–9



Crassula sarcocaulis
Evergreen or, in severe climates, semievergreen, bushy subshrub with tiny, ovate, succulent leaves. Bears terminal clusters of tiny, red buds opening to pale pink flowers in summer. **H** and **S** 12in (30cm).

☼ ◊ Z8–11

Ononis fruticosa (Shrubby restharrow)
Deciduous shrub that in summer bears pendent clusters of large, pealike, purplish-pink blooms with darker streaks. Leaves are divided into 3 serrated leaflets, which are hairy when young. **H** and **S** 12–24in (30–60cm).

☼ ◊ Z7–10

Diascia rigescens
Trailing perennial with semierect stems covered in heart-shaped, mid-green leaves. Spurred, flat-faced, salmon-pink flowers are borne along stem length in summer and early fall. **H** 9in (23cm), **S** to 12in (30cm).

☼ ◊ Z7–9

Geranium orientalitibeticum
Perennial spreading by tuberous, underground runners. Bears cup-shaped, pink flowers, with white centers, in summer. Leaves are deeply cut and marbled in shades of green. Can be invasive. **H** in flower 6–10in (15–25cm), **S** indefinite.

☼ ◊ Z5–7

Dianthus carthusianorum
Evergreen perennial bearing rounded, upward-facing, cherry-red or deep pink flowers on slender stems in summer above small tufts of grasslike leaves.
H 8in (20cm), **S** 3in (7cm).

☼ ◊ z5–9

PINK

***Lewisia* Cotyledon Hybrids**
Evergreen, clump-forming perennials with rosettes of large, thick, toothed leaves. In early summer, bear clusters of flowers in various shades of pink to purple, on erect stems. Good for a rock crevice or an alpine house.
H to 12in (30cm), **S** 6in (15cm) or more.

☼ ◊ pH Z5–8

Penstemon newberryi* f. *humilior
Evergreen, mat-forming shrub with arching branches clothed in small, leathery, dark green leaves. Bears short sprays of tubular, lipped, cherry-red to deep pink flowers in early summer.
H 6–8in (15–20cm), **S** 12in (30cm).

☼ ◊ Z7–10

Geranium sanguineum
(Bloody cranesbill)
Hummock-forming, spreading perennial with many cup-shaped, deep magenta-pink flowers borne in summer above round, deeply divided, dark green leaves. Makes good groundcover.
H to 10in (25cm), **S** 12in (30cm) or more.

☼ ◊ Z3–8

Origanum laevigatum
Deciduous, mat-forming subshrub with small, aromatic, dark green leaves, branching, red stems and a profusion of tiny, tubular, cerise-pink flowers, surrounded by red-purple bracts, in summer. **H** 9–12in (23–30cm), **S** 8in (20cm) or more.

☼ ◊ Z7–10

Erigeron alpinus (Alpine fleabane)
Clump-forming perennial of variable size that bears daisylike, lilac-pink flower heads on erect stems in summer. Leaves are long, ovate, and hairy. Suits a sunny border, bank, or large rock garden.
H 10in (25cm), **S** 8in (20cm).

☼ ◊ Z5–8

RED

Delphinium nudicaule
Short-lived, upright perennial with erect stems bearing deeply divided, basal leaves and, in summer, spikes of hooded, red or occasionally yellow flowers, with contrasting stamens. **H** 8in (20cm), **S** 2–4in (5–10cm).

☼ ◊ Z5–7 ⓘ

Penstemon pinifolius
Evergreen, bushy shrub with branched stems clothed in fine, dark green leaves. In summer, very narrow, tubular, bright scarlet flowers are borne in loose, terminal spikes. **H** 4–8in (10–20cm), **S** 6in (15cm).

☼ ◊ Z4–10

***Helianthemum* 'Fire Dragon'**
Evergreen, spreading shrub with saucer-shaped, orange-scarlet flowers in late spring and summer. Leaves are linear and gray-green.
H 9–12in (23–30cm), **S** 18in (45cm).

☼ ◊ Z6–8

***Zauschneria californica* 'Dublin'**
Clump-forming, woody-based perennial with lance-shaped, gray-green leaves. From late summer to early fall, bears terminal clusters of tubular, deep orange-scarlet flowers. **H** 12in (30cm), **S** 18in (45cm).

☼ ◊ Z8–11

Punica granatum* var. *nana
(Dwarf pomegranate)
Slow-growing, deciduous, rounded shrub that, in summer, bears funnel-shaped, red flowers with somewhat crumpled petals, followed by small, rounded, orange-red fruits.
H and **S** 12–36in (30–90cm).

☼ ◊ Z7–10

Cortusa matthioli
Clump-forming perennial with a basal rosette of rounded, deep green leaves and, in late spring and early summer, one-sided racemes of small, pendent, bell-shaped, reddish- or pinkish-purple flowers. **H** 6–8in (15–20cm), **S** 4in (10cm).

☀ ◐ Z5–8

Erodium cheilanthifolium
Compact, mound-forming perennial with pink flowers, veined and marked with purple-red, borne on stiff stems in late spring and summer. Grayish-green leaves are crinkled and deeply cut. **H** 6–8in (15–20cm), **S** 8in (20cm) or more.

☼ ◐ Z5–8

Scabiosa lucida
Clump-forming perennial with tufts of ovate leaves and rounded heads of pale lilac to deep mauve flowers, borne on erect stems in summer. **H** 8in (20cm), **S** 6in (15cm).

☼ ◐ Z4–9

Semiaquilegia ecalcarata
Short-lived, upright perennial with narrow, lobed leaves. In summer, each slender stem bears several pendent, open bell-shaped, dusky-pink to purple flowers, with no spurs. **H** 8in (20cm), **S** 3in (7cm).

☼ ◐ Z6–8

Calceolaria arachnoidea
Evergreen, clump-forming perennial with a basal rosette of wrinkled leaves, covered in white down. Upright stems bear spikes of many pouch-shaped, deep purple flowers in summer. Best treated as a biennial. **H** 10in (25cm), **S** 5in (12cm).

☼ ◐ Z8–9

Penstemon serrulatus
Semievergreen subshrub, deciduous in severe climates, that has small, elliptic, dark green leaves and tubular, blue to purple flowers borne in loose spikes in summer. Soil should not be too dry. **H** 24in (60cm), **S** 12in (30cm).

☼ ◐ Z3–9

Wulfenia amherstiana
Evergreen perennial with rosettes of narrowly spoon-shaped, toothed leaves. Erect stems bear loose clusters of small, tubular, purple or pinkish-purple flowers in summer. **H** 6–12in (15–30cm), **S** to 12in (30cm).

☼ ◐ Z5–9

***Phlox divaricata* subsp. *laphamii* 'Chattahoochee'**
Short-lived, clump-forming perennial that has saucer-shaped, red-eyed, bright lavender flowers throughout summer-fall. Narrow, pointed leaves are dark reddish-purple when young. **H** 6–8in (15–20cm), **S** 12in (30cm).

☼ ◐ Z4–8

Phlox divaricata* subsp. *laphamii
Semievergreen, creeping perennial with ovate leaves and upright stems bearing loose clusters of saucer-shaped, pale to deep violet-blue flowers in summer. **H** 12in (30cm), **S** 8in (20cm).

◑ ◐ Z4–8

PURPLE

Parahebe catarractae
Evergreen subshrub with ovate, toothed, mid-green leaves and, in summer, loose sprays of small, open funnel-shaped, white flowers, heavily zoned and veined pinkish-purple. **H** and **S** 12in (30cm).

☼ 💧Z9–10

***Sisyrinchium* 'E.K. Balls'**
Clump-forming, variable perennial with fans of narrowly sword-shaped, upright, mid-green leaves. In summer, produces a succession of many star-shaped, bluish-mauve flowers. **H** 8in (20cm), **S** 6in (15cm).

☼ 💧Z7–8

Campanula wanneri
Clump-forming perennial with branching stems and hairy, ovate leaves. In summer, bears pendent, bell-shaped, blue to violet-blue flowers in loose, terminal spikes. **H** 6–9in (15–23cm), **S** 10in (25cm).

☼ 💧Z7–9

BLUE

Campanula barbata
(Bearded bellflower)
Evergreen perennial with a basal rosette of ovate, hairy, gray-green leaves. In summer, bears one-sided racemes of bell-shaped, white to lavender-blue flowers. Short-lived but sets seed freely. **H** 8in (20cm), **S** 5in (12cm).

☼ 💧Z5–8

Convolvulus sabatius
Trailing perennial with slender stems clothed in small, ovate leaves and open trumpet-shaped, vibrant blue-purple flowers in summer and early fall. Shelter in a rock crevice in a cold site. **H** 6–8in (15–20cm), **S** 12in (30cm).

☼ 💧Z7–9

Lithodora oleifolia
Evergreen shrub with ovate, pointed, silky, mid-green leaves. Curving stems bear loose sprays of several small, funnel-shaped, light blue flowers in early summer. **H** 6–8in (15–20cm), **S** to 3ft (1m).

☼ 💧Z6–8

Linum perenne
Upright perennial with slender stems, clothed in grasslike leaves, that bear terminal clusters of open funnel-shaped, clear blue flowers in succession throughout summer. **H** 12in (30cm), **S** to 6in (15cm).

☼ 💧Z7–9

Phyteuma scheuchzeri
Tufted perennial with narrow, dark green leaves and terminal heads of spiky, blue flowers that are borne in summer. Seeds freely; dislikes winter wet. **H** 6–8in (15–20cm), **S** 4in (10cm).

☼ 💧Z5–8

Moltkia suffruticosa
Deciduous, upright subshrub. In summer, bears clusters of funnel-shaped, bright blue flowers, pink in bud, on hairy stems. Leaves are long, pointed and hairy. **H** 6–16in (15–40cm), **S** 12in (30cm).

☼ 💧Z7–9

Veronica prostrata
(Prostrate speedwell)
Dense, mat-forming perennial that has upright spikes of small, saucer-shaped, brilliant blue flowers in early summer. Foliage is narrow, ovate, and toothed.
H to 12in (30cm), **S** indefinite.

☼ 💧 Z5–8

***Lithodora diffusa* 'Heavenly Blue'**
Evergreen, prostrate shrub with trailing stems bearing pointed, oblong, hairy leaves and, in summer, many open funnel-shaped, deep blue flowers in leaf axils. Trim stems hard after flowering.
H 6–12in (15–30cm), **S** to 18in (45cm).

☼ 💧 pH Z8–11

***Veronica prostrata* 'Trehane'**
Dense, mat-forming perennial bearing upright spikes of small, saucer-shaped, deep violet-blue flowers in early summer above narrow, toothed, yellow or yellowish-green leaves. **H** in flower 6–8in (15–20cm), **S** indefinite.

☼ 💧 Z5–8

***Veronica austriaca* subsp. *teucrium* 'Kapitan'**
Dense, mat-forming perennial bearing erect spikes of small, saucer-shaped, bright deep blue flowers in early summer. Leaves are narrow, ovate, and toothed. **H** to 12in (30cm), **S** indefinite.

☼ 💧 Z4–8

Veronica austriaca* subsp. *teucrium
Spreading perennial with narrow spikes of small, flat, outward-facing, bright blue flowers in summer. Leaves are small, divided, hairy, and grayish-green.
H and **S** 10–24in (25–60cm).

☼ 💧 Z4–8

Erodium chrysanthum
Mound-forming perennial, grown for its dense, silvery stems and finely cut, fernlike leaves. Has small sprays of cup-shaped, sulfur- or creamy-yellow flowers in late spring and summer.
H and **S** 9in (23cm).

☼ 💧 Z7–8

***Hypericum olympicum* f. *uniflorum* 'Citrinum'**
Deciduous, dense, rounded subshrub with tufts of upright stems, clothed in small, ovate, gray-green leaves. Bears terminal clusters of lemon-yellow flowers throughout summer.
H and **S** 6–12in (15–30cm).

☼ 💧 Z6–8

***Verbascum* 'Letitia'**
Evergreen, stiff-branched shrub with toothed, gray-green leaves. From late spring to midfall, continuously bears outward-facing, 5-lobed, bright yellow flowers with orange centers. Hates winter wet; good in an alpine house.
H and **S** to 10in (25cm).

☼ 💧 Z5–9

Linum arboreum
Evergreen, compact shrub with blue-green leaves. In summer, bears a succession of funnel-shaped, bright yellow flowers opening in sunny weather and borne in terminal clusters. **H** to 12in (30cm), **S** 12in (30cm).

☼ 💧Z6–9

Corydalis lutea
Evergreen, clump-forming perennial with fleshy, fibrous roots and semierect, basal, gray-green leaves. Bears racemes of slender, yellow flowers, with short spurs, in late spring and summer. **H** and **S** 8–12in (20–30cm).

☼ 💧Z5–8

Euryops acraeus
Evergreen, dome-shaped shrub with stems clothed in toothed, silvery-blue leaves. Bears solitary daisylike, bright yellow flower heads in late spring and early summer. **H** and **S** 12in (30cm).

☼ 💧Z8–11

Chrysogonum virginianum
Mat-forming perennial with daisylike, yellow flower heads borne on short stems in summer-fall and ovate, toothed, mid-green leaves. Although plant spreads by underground runners, it is not invasive. **H** 6–8in (15–20cm), **S** 4–6in (10–15cm) or more.

◑ 💧Z5–9

***Helianthemum* 'Wisley Primrose'**
Fast-growing, evergreen, compact shrub bearing saucer-shaped, soft pale yellow flowers in summer. Has oblong, gray-green leaves. **H** 9in (23cm), **S** 12in (30cm) or more.

☼ 💧Z6–8

Hertia cheirifolia
Evergreen shrub with narrow, somewhat fleshy, gray leaves. In early summer, bears daisylike, yellow flower heads singly on upright stems. Needs a warm, sheltered site. **H** 8–12in (20–30cm), **S** 12in (30cm) or more.

☼ 💧Z8–9

Eriogonum umbellatum
(Sulfur flower)
Evergreen, prostrate to upright perennial with mats of green leaves, white and woolly beneath. Bears heads of tiny, yellow flowers in summer that later turn copper. Dwarf forms available. **H** 3–12in (8–30cm), **S** 6–12in (15–30cm).

☼ 💧Z3–8

Verbascum dumulosum
Evergreen, mat-forming, shrubby perennial with hairy, gray or gray-green leaves. In late spring and early summer, bears a succession of 5-lobed, bright yellow flowers in short racemes. Dislikes winter wet. **H** 6in (15cm) or more, **S** 9–12in (23–30cm) or more.

☼ 💧Z6–9

Ranunculus gramineus
Erect, slender perennial with grass-like, blue-green leaves. Bears several cup-shaped, bright yellow flowers in late spring and early summer. Prefers rich soil. Seedlings will vary in height and flower size. **H** 16–20in (40–50cm), **S** 3–4in (8–10cm).

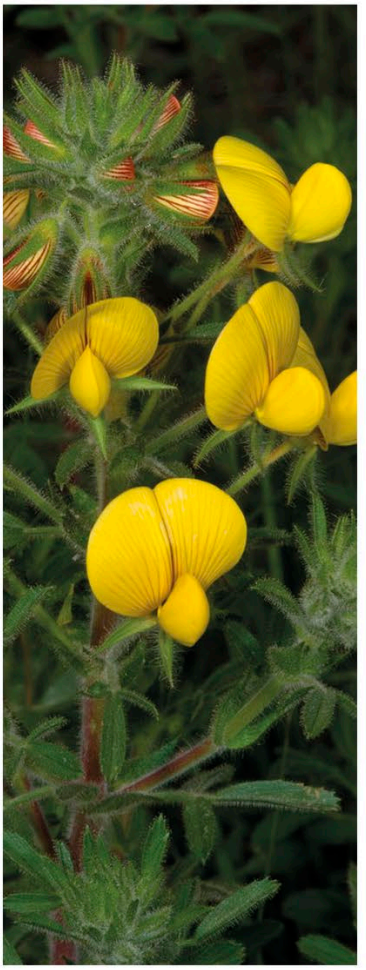
☼ 💧Z6–8 ⓘ

Sedum rupestre
(Reflexed stonecrop)
Evergreen perennial with loose mats of rooting stems bearing narrow, fleshy leaves. Produces flat, terminal heads of tiny, bright yellow flowers in summer. Makes good groundcover. **H** 6–8in (15–20cm), **S** indefinite.

☼ 💧Z6–9 ⓘ

Genista lydia
Deciduous, domed shrub with slender, arching branches and blue-green leaves. Massed terminal clusters of pealike, bright yellow flowers are produced in late spring and early summer. Will trail over a large rock or wall. **H** 18–24in (45–60cm), **S** 24in (60cm) or more.

☼ 💧Z6–9



Ononis natrix
(Large yellow restharrow)
Deciduous, compact, erect shrub with pealike, red-streaked, yellow flowers in pendent clusters in summer. Hairy leaves are divided into 3 leaflets. **H** and **S** 12in (30cm) or more.

☼ 💧Z7–9

ORANGE

***Diascia* 'Salmon Supreme'**
Mat-forming perennial with heart-shaped leaves. Dense spikes of pretty, pale-apricot flowers with very small, deeply concave "windows" are produced over a long period, from summer through to fall. **H** 6in (15cm), **S** to 20in (50cm).

☼ 💧Z8–9

***Helianthemum* 'Ben More'**
Evergreen, spreading, twiggy shrub that bears a succession of saucer-shaped, reddish-orange flowers in loose, terminal clusters in late spring and summer. Has small, glossy, dark green leaves. **H** 9–12in (23–30cm), **S** 12in (30cm).

☼ 💧Z6–8

Crepis aurea
Clump-forming perennial with a basal cluster of oblong, light green leaves. In summer, produces dandelion-like, orange flower heads, singly, on stems covered with black and white hairs. **H** 4–12in (10–30cm), **S** 6in (15cm).

☼ 💧Z5–7

Sorbus reducta
Deciduous shrub forming a low thicket of upright branches. Small, gray-green leaves, divided into leaflets, turn bronze-red in late fall. In early summer, bears loose clusters of flat, white flowers, followed by pink berries. **H** and **S** to 12in (30cm) or more.

☼ ◊ Z5–8 ⓘ

Silene schafta
Spreading perennial with tufts of narrow, ovate leaves. Bears sprays of 5-petaled, rose-magenta flowers from late summer to late fall.
H 10in (25cm), **S** 12in (30cm).

☼ ◊ Z4–8

Ceratostigma plumbaginoides
Bushy perennial that bears small, terminal clusters of single, brilliant blue flowers on reddish, branched stems in late summer and fall. Ovate leaves turn rich red in fall. **H** 18in (45cm), **S** 8in (20cm).

☼ ◊ Z5–9

Gentiana septemfida
Evergreen perennial with many upright, then arching stems clothed with ovate leaves. Bears heads of trumpet-shaped, mid-blue flowers in summer–fall. Likes humus-rich soil but tolerates reasonably drained, heavy clay. **H** 6–8in (15–20cm), **S** 12in (30cm).

☼ ◊ Z6–8

Gaultheria cuneata
Evergreen, compact shrub with stiff stems clothed in leathery, ovate, mid-green leaves. In summer, bears nodding, urn-shaped, white flowers, in leaf axles, followed by white berries in fall.
H and **S** 12in (30cm).

◑ ◊ pH Z4–7 ⓘ

Ranunculus calandrinioides
Clump-forming perennial that loses its long, ovate, blue-green leaves in summer; in a mild winter will bear a succession of cup-shaped, pink-flushed, white flowers for many weeks. Needs very sharp drainage.
H and **S** to 8in (20cm).

☼ ◊ Z8–9 ⓘ

Tanacetum argenteum
Mat-forming perennial, usually evergreen, grown for its finely cut, bright silver leaves. Bears a profusion of small, daisylike, white flower heads in summer. **H** in flower 6–9in (15–23cm), **S** 8in (20cm).

☼ ◊ Z5–7 ⓘ

Celmisia semicordata
Evergreen perennial with swordlike, silver leaves in large clumps and, in summer, daisylike, white flower heads borne singly on hairy stems.
H and **S** 12in (30cm).

☼ ◑ pH Z8–9

GREEN

WHITE

Tanacetum densum* subsp. *amani
Clump-forming perennial retaining fernlike, hairy, gray leaves in winter in mild climates. Bears daisylike, yellow flower heads with woolly bracts in summer. Dislikes winter wet. **H** and **S** 8in (20cm).

☼ 💧Z6–8 ⓘ

***Hebe cupressoides* 'Boughton Dome'**
Slow-growing, evergreen, dome-shaped shrub with scalelike, stem-clasping, dark gray-green leaves. Bears terminal clusters of small, 4-lobed, blue-tinged, white flowers in summer. **H** 12in (30cm), **S** to 24in (60cm).

☼ 💧Z8–9

Androsace vandellii
Evergreen, dense, cushion-forming perennial with narrow, gray leaves and a profusion of stemless, white flowers in spring. Needs careful cultivation with a deep collar of grit under the cushion. **H** 1in (25cm), **S** to 4in (10cm).

☼ 💧 pH Z5–7

***Arabis alpina* subsp. *caucasica* 'Variegata'**
Evergreen, mat-forming perennial with rosettes of ovate, cream-splashed, mid-green leaves. Bears bunches of single, sometimes pink-flushed, white flowers from early spring to summer. **H** and **S** 6in (15cm).

☼ 💧Z4–8

Ozothamnus coralloides
Evergreen, upright shrub with gray stems clothed in neat, dark green leaves, marked silver. Occasionally bears fluffy, yellow flower heads. Suits a cold frame or an alpine house. Hates winter wet. **H** 6–9in (15–23cm), **S** 6in (15cm).

☼ 💧Z8–9

Ozothamnus selago
Evergreen, upright shrub with stiff stems covered in scalelike leaves. Intermittently bears fluffy, creamy-white flower heads. Makes a good foil for spring bulbs. **H** and **S** 6–9in (15–23cm).

☼ 💧Z9–10

Arenaria balearica
Prostrate perennial that is evergreen in all but the most severe winters. Will form a green film over a wet, porous rock face. Minute, white flowers stud mats of foliage in late spring and early summer. **H** less than ½in (1cm), **S** indefinite.

☼ 💧Z4–7

***Salix* 'Boydii'**
Very slow-growing, deciduous, upright shrub forming a gnarled, branched bush. Has ovate, rough-textured leaves; catkins are rarely produced. Will tolerate light shade. **H** to 6–9in (15–23cm), **S** to 12in (30cm).

☼ 💧Z4–7

Ballota pseudodictamnus
Evergreen, mound-forming subshrub with rounded, gray-green leaves and stems covered with woolly, white hairs. In summer, bears whorls of small, pink flowers with conspicuous, enlarged, pale green calyces. **H** 2ft (60cm), **S** 3ft (90cm).

☼ 💧Z7–9

Saxifraga scardica
Slow-growing, evergreen perennial with hard cushions composed of blue-green rosettes of leaves. In spring, bears small clusters of upward-facing, cup-shaped, white flowers. Does best in an alpine house or sheltered scree. **H** 1in (25cm), **S** 3in (8cm).

☼ ◊ Z7–8

Saxifraga burseriana
Slow-growing, evergreen perennial with hard cushions of spiky, gray-green leaves. In spring, open cup-shaped, white flowers are borne on short stems. **H** 1–2in (2.5–5cm), **S** to 4in (10cm).

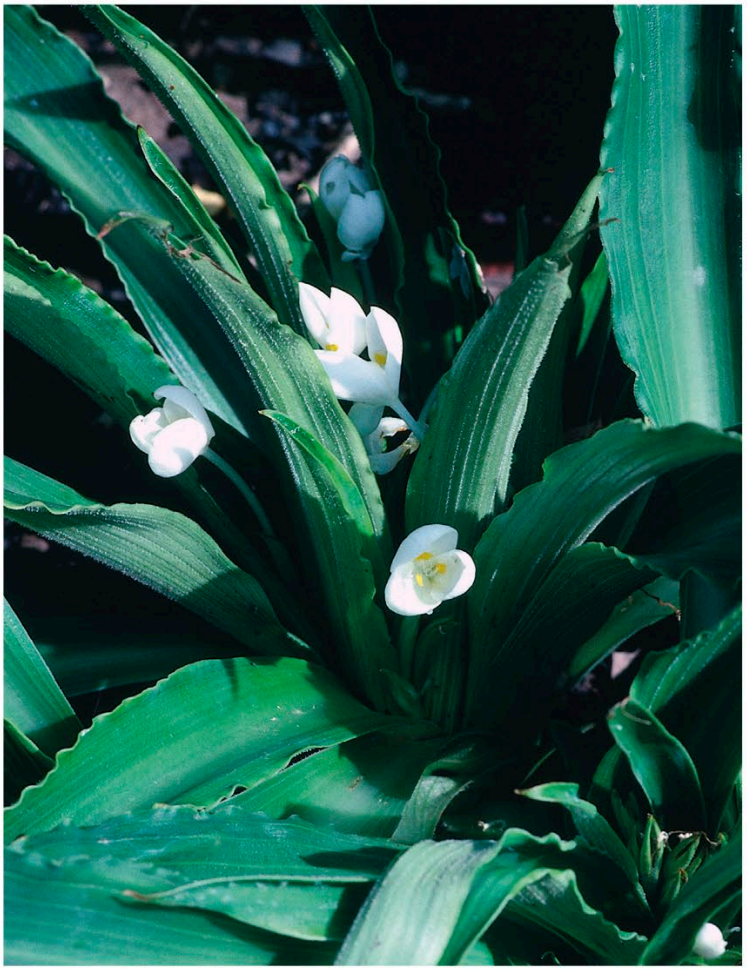
☼ ◊ Z6–8

Sanguinaria canadensis (Bloodroot)
Rhizomatous perennial with fleshy, underground stems that exude red sap when cut. In spring, bears white flowers, sometimes pink-flushed or slate-blue on reverses, as blue-gray leaves unfurl. **H** 4–6in (10–15cm), **S** 12in (30cm).

☼ ◑ Z3-9

Cardamine trifolia
Groundcover perennial with creeping stems clothed in rounded, toothed, 3-parted leaves. In late spring and early summer, bears loose heads of open cup-shaped, white flowers on bare stems. **H** 4–6in (10–15cm), **S** 12in (30cm).

☼ ◑ Z5–7



Weldenia candida
Perennial with rosettes of strap-shaped, wavy-margined leaves, growing from tuberous roots. Bears a succession of upright, cup-shaped, pure white flowers in late spring and early summer. **H** and **S** 3–6in (8–15cm).

☼ ◊ Z9–10

Maianthemum bifolium
Spreading, rhizomatous perennial with pairs of large, ovate, glossy, dark green leaves arising direct from rhizomes. Stems produce a raceme of 4-petaled, white flowers in early summer, followed by small, spherical, red fruits. May be invasive. **H** 4in (10cm), **S** indefinite.

☀ ◑ pH Z4–5

Dicentra cucullaria
(Dutchman's breeches)
Compact perennial with fernlike foliage and arching stems each bearing a few small, yellow-tipped, white flowers, like tiny, inflated trousers, in spring. Lies dormant in summer. **H** 6in (15cm), **S** to 12in (30cm).

☼ ◊ Z4–8 ⓘ

Arenaria tetraquetra
Evergreen perennial that forms a gray-green cushion of small leaves. Stemless, star-shaped, white flowers are produced in late spring. Well-suited to a trough or an alpine house. **H** 1in (25cm), **S** 6in (15cm) or more.

☼ ◊ Z3–5

Pulsatilla vernalis
Tufted perennial with rosettes of feathery leaves. Densely hairy, brown flower buds are produced in late winter and open in early spring to somewhat nodding, open cup-shaped, pearl-white flowers. Buds dislike winter wet.
H 2–4in (5–10cm), **S** 4in (10cm).

☼ 💧Z4–7 ⓘ

Ranunculus alpestris
(Alpine buttercup)
Short-lived, evergreen, clump-forming perennial that bears cup-shaped, white flowers on erect stems from late spring to midsummer. Glossy, dark green leaves are rounded and serrated.
H 1–5in (2.5–12cm), **S** 4in (10cm).

◐ 💧Z5–8 ⓘ

Androsace villosa
Evergreen, mat-forming perennial with very hairy rosettes of tiny leaves. Bears umbels of small, white flowers, with yellow centers that turn red, in spring.
H 1in (25cm), **S** 8in (20cm).

☼ 💧Z5–7

Ficaria verna* var. *albus
Mat-forming perennial producing cup-shaped, single, creamy-white flowers, with glossy petals, in early spring. Leaves are heart-shaped and dark green. Can spread rapidly; good for a wild garden. **H** 2in (5cm), **S** 8in (20cm).

☼ 💧Z4–8 ⓘ

Cassiope lycopodioides
Evergreen, prostrate, mat-forming shrub with slender stems densely set with minute, scalelike, dark green leaves. In spring, short, reddish stems bear tiny, bell-shaped, white flowers with red calyces, singly in leaf axils.
H 3in (8cm), **S** 12in (30cm).

◐ 💧pH Z7–8

Corydalis popovii
Tuberous perennial with leaves divided into 3–6 bluish-green leaflets. In spring, bears loose racemes of deep red-purple and white flowers, each with a long spur. Keep dry when dormant.
H and **S** 4–6in (10–15cm).

☼ 💧Z7–8

Cassiope mertensiana
Evergreen, dwarf shrub with scalelike, dark green leaves tightly pressed to stems. In early spring, bears bell-shaped, creamy-white flowers, with green or red calyces, in leaf axils. **H** 6in (15cm), **S** 8in (20cm).

☀ 💧pH Z2–6

Leptinella atrata* subsp. *luteola
Evergreen, mat-forming perennial that in late spring and early summer bears blackish-red flower heads with creamy-yellow stamens. Leaves are small, finely cut, and dark green. Needs adequate moisture; best in an alpine house. **H** 1in (25cm), **S** to 10in (25cm).

☼ 💧Z8–9

Scoliopus bigelowii
Compact perennial with basal, veined leaves, sometimes marked brown. In early spring, bears flowers with purple inner petals and greenish-white outer petals with deep purple lines.
H 3–4in (8–10cm), **S** 4–6in (10–15cm).

☼ 💧Z6–8

Gypsophila cerastioides
Prostrate perennial with a profusion of small, saucer-shaped, purple-veined, white flowers borne in late spring and early summer above mats of rounded, velvety, mid-green foliage. **H** ¾in (2cm), **S** to 4in (10cm) or more.

☼ 💧Z5–8

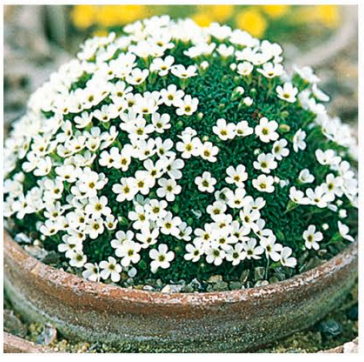
Shortia galacifolia (Oconee bells)
Evergreen, clump-forming, dwarf perennial with round, toothed, leathery, glossy leaves. In late spring, bears cup- to trumpet-shaped, often pink-flushed, white flowers with deeply serrated petals. **H** to 6in (15cm), **S** 6–9in (15–23cm).

◐ 💧pH Z6–9

WHITE

Cerastium tomentosum
(Snow-in-summer)
Very vigorous, groundcover perennial, only suitable for a hot, dry bank, with prostrate stems covered by tiny, gray leaves. In late spring and summer, bears star-shaped, white flowers above foliage.
H 3in (8cm), **S** indefinite.

☼ ◊ Z3–7



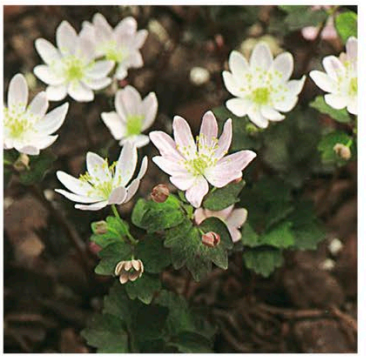
Androsace pyrenaica
Evergreen perennial with small rosettes of tiny, hairy leaves, tightly packed to form hard cushions. Minute, stemless, single, white flowers are borne in spring.
H 1½in (4cm), **S** to 4in (10cm).

☼ ◊ Z6–7

Anemone trullifolia
Creeping, fibrous rooted perennial with wedge-shaped, semierect, mid-green basal leaves, each with 3 deeply toothed lobes. Rounded flowers of 5 petals, varying from rich blue to near white, are borne in early summer and late summer.
H and **S** 8in (20cm).

☼ ◑ Z5–8 ⓘ

PINK



Anemonella thalictroides
Perennial with delicate, fernlike leaves growing from a cluster of small tubers. From spring to early summer, bears small, cup-shaped, white or pink flowers, singly on finely branched stems. Needs humus-rich soil. **H** 4in (10cm), **S** 1½in (4cm) or more.

☀ ◑ Z4–7

Daphne jasminea
Evergreen, compact shrub. Bears small, white flowers, pink-flushed externally, in late spring and early summer and again in fall. Brittle stems are clothed in gray-green leaves. Suits an alpine house or a dry wall.
H 3–4in (8–10cm), **S** to 12in (30cm).

☼ ◊ Z7–9 ⓘ

Paraquilegia anemonoides
Tufted perennial with fernlike, blue-green leaves. In spring, pale lavender-blue buds open to pendent, cup-shaped, almost white flowers borne singly on arching stems. May be difficult to establish. **H** and **S** 4–6in (10–15cm).

☼ ◊ Z5–8

Trillium rivale
Perennial with ovate leaves, divided into 3 leaflets. In spring, bears open cup-shaped, white or pale pink flowers with dark-spotted, heart-shaped petals, singly on upright, later arching stems.
H to 6in (15cm), **S** 4in (10cm).

◑ ◊ Z5–8

***Saxifraga* x *irvingii* 'Jenkinsiae'**
Slow-growing perennial with very tight, gray-green cushions of foliage. Bears a profusion of open cup-shaped, lilac-pink flowers on slender stems in early spring.
H 3–4in (8–10cm), **S** to 6in (15cm).

◑ ◊ Z6–7

Androsace carnea
Evergreen, cushion-forming perennial that has small rosettes of pointed leaves with hairy margins. In spring, 2 or more stems rise above each rosette, bearing tiny, single, pink flowers. Suits a trough.
H and **S** 2in (5cm).

☼ ◊ Z4–7

Arenaria purpurascens
Evergreen, mat-forming perennial with sharp-pointed, glossy leaves, above which rise many small clusters of star-shaped, pale to deep purplish-pink flowers in early spring. **H** ½in (1cm), **S** to 6in (15cm).

☼ 💧Z4–7

Epigaea gaultherioides
Evergreen, prostrate subshrub with cup-shaped, shell-pink flowers borne in terminal clusters in spring. Hairy stems bear heart-shaped, dark green leaves. Difficult to grow and propagate. **H** to 4in (10cm), **S** to 10in (25cm) or more.

☀ 💧 pH Z8–9

Claytonia megarhiza* var. *nivalis
Evergreen perennial with a rosette of spoon-shaped, succulent leaves. Bears small heads of tiny, deep pink flowers in spring. Grows best in a deep pot of gritty potting mix in an alpine house. **H** ½in (1cm), **S** 3in (8cm).

☼ 💧Z5–7

Antennaria rosea
Semievergreen perennial forming a spreading mat of tiny, ovate, woolly leaves. Bears fluffy, rose-pink flower heads in small, terminal clusters in late spring and early summer. Good as groundcover with small bulbs. **H** 1in (25cm), **S** to 16in (40cm).

☼ 💧Z5–9

***Daphne petraea* 'Grandiflora'**
Slow-growing, evergreen, compact shrub that bears terminal clusters of fragrant, rich pink flowers in late spring and tiny, glossy leaves. Suits an alpine house, a sheltered, humus-rich rock garden, or a trough. **H** to 6in (15cm), **S** to 10in (25cm).

☼ 💧Z5–7 ⓘ

Vaccinium vitis-idaea* subsp. *minus
Evergreen, mat-forming subshrub with tiny, ovate, leathery leaves. In late spring, produces small, erect racemes of many tiny, bell-shaped, deep pink or deep pink-and-white flowers. **H** 2–3in (5–8cm), **S** 4–6in (10–15cm).

☀ 💧 pH Z2–6

Daphne arbuscula
Evergreen, prostrate shrub. In late spring, bears many very fragrant, tubular, deep pink flowers in terminal clusters. Narrow, leathery, dark green leaves are crowded at the ends of the branches. Likes humus-rich soil. **H** 4–6in (10–15cm), **S** 20in (50cm).

☀ 💧Z5–7 ⓘ

Mazus reptans
Prostrate perennial that has tubular, purple or purplish-pink flowers, with protruding, white lips, spotted red and yellow, borne singly on short stems in spring. Narrow, toothed leaves are in pairs along stem. **H** to 2in (5cm), **S** 12in (30cm) or more.

☼ 💧Z5–8

Silene acaulis (Moss campion)
Evergreen, cushion-forming perennial with minute, bright green leaves studded with tiny, stemless, 5-petaled, pink flowers in spring. May be difficult to bring into flower; prefers a cool climate. **H** to 1in (25cm), **S** 6in (15cm).

☼ ◊ Z3–5

Oxalis adenophylla
Mat-forming, fibrous-rooted, tuberous perennial with gray-green leaves divided into narrow, wavy lobes. In spring, bears rounded, purplish-pink flowers, each 1–1½in (2.5–4cm) across, with darker purple eyes. **H** to 2in (5cm), **S** 3–4in (8–10cm).

☼ ◊ Z6–8

Erinus alpinus
Semievergreen, short-lived perennial with rosettes of soft, mid-green leaves covered, in late spring and summer, with small, purple, pink or white flowers. Self-seeds freely. **H** and **S** 2–3in (5–8cm).

☼ ◊ Z4–7

Thlaspi cepaeifolium* subsp. *rotundifolium
Clump-forming perennial with dense tufts of round leaves and small, open cup-shaped, pale to deep purplish- or lilac-pink flowers in spring. Needs cool conditions. May be short-lived. **H** 2–3in (5–8cm), **S** 4in (10cm).

☼ ◊ Z6–9

Armeria juniperifolia
Evergreen, cushion-forming perennial composed of loose rosettes of sharp-pointed, mid- to gray-green leaves. Pale pink flowers are borne in spherical umbels in late spring and early summer. **H** 2–3in (5–8cm), **S** 6in (15cm).

☼ ◊ Z5–7

Oxalis acetosella* var. *subpurpurascens
Creeping, rhizomatous perennial forming mats of 3-lobed leaves. Cup-shaped, soft pink flowers, each ½in (1cm) across, with 5 darker-veined petals, are produced in spring. **H** 2in (5cm), **S** indefinite.

☼ ◊ Z3–8

***Arabis alpina* subsp. *caucasica* 'Douler Angevine'**
Evergreen, mat-forming perennial bearing loose rosettes of obovate, toothed, mid-green leaves with irregular, creamy-yellow margins. In spring, produces fragrant, 4-petaled, bright pink flowers. **H** 6in (15cm), **S** 20in (50cm).

☼ ◊ Z4–8

Shortia soldanelloides
Evergreen, mat-forming perennial with rounded, toothed leaves and bearing small, pendent, bell-shaped and fringed, deep pink flowers in late spring. **H** 2–4in (5–10cm), **S** 4–6in (10–15cm).

☀ ◊ pH Z6–8

***Anagallis tenella* 'Studland'**
Short-lived perennial that forms prostrate mats of tiny, bright green leaves studded in spring with honey-scented, star-shaped, bright pink flowers. **H** ½in (1cm), **S** 6in (15cm) or more.

☼ ◑ Z5–7

Saxifraga oppositifolia
(Purple mountain saxifrage)
Evergreen, prostrate perennial with clusters of tiny, white-flecked leaves. Bears open cup-shaped, dark purple, purplish-pink, or, rarely, white flowers in early spring. Likes an open position. **H** 1–2in (2.5–5cm), **S** 6in (15cm).

◐ ◑ Z1–7

Androsace carnea* subsp. *laggeri
Evergreen, cushion-forming perennial composed of small, tight rosettes of pointed leaves. Cup-shaped, deep pink flowers are borne in small clusters above cushions in spring. **H** and **S** 2in (5cm).

☼ ◑ Z4–7

Polygonatum hookeri
Slow-growing, dense, rhizomatous perennial, bearing loose spikes of several small, bell-shaped, pale to deep pink flowers in late spring and early summer. Leaves are tiny and lance-shaped. Suits a peat bed. **H** to 2in (5cm), **S** to 12in (30cm).

☀ ◑ Z6–9 ⓘ

***Aubrieta* 'Joy'**
Vigorous, evergreen, trailing perennial that forms mounds of soft green leaves. In spring, bears double, pale mauve-pink flowers on short stems. **H** 4in (10cm), **S** 8in (20cm).

☼ ◑ Z5–7

***Arabis blepharophylla* 'Frühlingszauber'**
Short-lived, evergreen, mat-forming perennial bearing loose rosettes of dark green leaves with gray margins. Compact racemes of fragrant, 4-petaled, dark purple-pink flowers are produced in spring. **H** 5in (12cm), **S** 8in (20cm).

☼ ◑ Z5–8

***Corydalis solida* 'George Baker'**
Tuberous perennial with fernlike, divided leaves and dense racemes of spurred, rich deep rose-red flowers in spring. **H** and **S** 4–6in (10–15cm).

☼ ◑ Z5–7

***Saxifraga federici-augusti* subsp. *grisebachii* 'Wisley Variety'**
Evergreen perennial with rosettes of lime-encrusted leaves. Crosier-shaped stems with pale pink to bright red hairs bear dense racemes of dark red flowers in spring. **H** 4in (10cm), **S** 6in (15cm).

☼ ◑ Z6–8

Saxifraga sempervivum
Evergreen, hummock-forming perennial with tight rosettes of tufted, silvery-green leaves. Crosier-shaped flower stems, covered in silvery hairs and emerging from rosettes, bear racemes of dark red flowers in early spring. **H** and **S** 4–6in (10–15cm).

◐ ◑ Z6–7

***Aubrieta* x *cultorum* 'Argenteovariegata'**
Evergreen, compact perennial, grown for its trailing, green leaves, which are heavily splashed with creamy-white. Produces pinkish-lavender flowers in spring. **H** 2in (5cm), **S** 6in (15cm).

☼ ◊ Z5–7

Saxifraga stribrnyi
Evergreen, mound-forming perennial with small, lime-encrusted rosettes of leaves. Crosier-shaped stems, covered in pinkish-buff hairs, bear racemes of deep maroon-red flowers above leaves in late spring and early summer. **H** 3in (8cm), **S** 4–5in (10–12cm).

◐ ◊ Z6–7

Soldanella alpina (Alpine snowbell)
Evergreen, clump-forming perennial with tufts of leaves and short, bell-shaped, fringed, pinkish-lavender or purplish-pink flowers in early spring. Difficult to flower well. **H** to 3in (8cm), **S** 3–4in (8–10cm).

◐ ◊ Z4–7

***Aubrieta* 'Greencourt Purple'**
Evergreen, mat-forming perennial with rosetted, mid-green leaves. Produces masses of double, bright purple flowers in spring. Very good on a dry wall. **H** 4–6in (10–15cm), **S** 12in (30cm) or more.

☼ ◊ Z5–7

***Aubrieta* 'Doctor Mules Variegata'**
Evergreen, vigorous, mound-forming perennial with single, purple flowers borne in spring above mounds of small, rounded, mid-green leaves with white margins. **H** 2–3in (5–8cm), **S** 12in (30cm).

☼ ◊ Z4–8

Polygala chamaebuxus* var. *grandiflora
Evergreen, woody-based perennial with terminal clusters of pealike, reddish-purple and yellow flowers in late spring and early summer. Leaves are small, ovate, leathery, and dark green. **H** to 6in (15cm), **S** to 12in (30cm).

◐ ◊ Z6–9

Soldanella villosa
Evergreen, clump-forming perennial with round, leathery, hairy-stalked leaves and nodding, bell-shaped, fringed, purplish-lavender flowers borne on erect stems in early spring. Dislikes winter wet. **H** 4in (10cm), **S** 4–6in (10–15cm).

◐ ◊ Z4–7

Corydalis diphylla
Tuberous perennial with semierect, basal leaves, divided into narrow leaflets, and loose racemes of purple-lipped flowers with white spurs in spring. Protect tubers from excess moisture in summer. **H** 4–6in (10–15cm), **S** 3–4in (8–10cm).

☼ ◊ Z5–7

Viola tricolor (Heartsease, Wild pansy)
Short-lived perennial or annual with neat, flat-faced flowers in combinations of white, yellow, and shades of purple from spring through to fall. Self-seeds profusely. **H** 2–6in (5–15cm), **S** 2–6in (5–15cm) or more.

☼ ◊ Z3–9

Hepatica nobilis* var. *japonica
Slow-growing perennial with leathery, lobed leaves, semievergreen in all but very cold or arid climates. Bears slightly cupped, lilac-mauve, pink, or white flowers in spring. **H** to 3in (8cm), **S** to 5in (12cm).

◐ ◊ Z5–8

Jeffersonia dubia
Tufted perennial with 2-lobed, blue-green leaves, sometimes flushed pink when unfolding. Bears cup-shaped, pale lilac to purplish blue flowers singly in spring. **H** 4–6in (10–15cm), **S** to 9in (23cm).

◐ ◊ Z5–8

Synthyris missurica* subsp. *stellata
Evergreen, mounded, rhizomatous perennial that bears dense spikes of small, violet-blue flowers in spring above rounded, deeply toothed leaves. Tolerates sun if soil remains moist. **H** 4–6in (10–15cm), **S** 6in (15cm).

◐ ◊ Z2–6

***Aubrieta* 'Purple Charm'**
Evergreen, mat-forming perennial with rosetted, mid-green leaves. In spring, produces masses of single, lavender-purple flowers, with yellow eyes. Very good on a dry wall. **H** 4–6in (10–15cm), **S** 12in (30cm) or more.

☼ ◊ Z5–7

Viola pedata (Bird's-foot violet)
Clump-forming perennial with finely divided foliage and yellow-centered, pale violet, rarely white flowers borne singly on slender stems in late spring and early summer. Needs sharp drainage; grow in an alpine house. **H** 3in (8cm), **S** 3in (8cm).

☼ ◊ pH Z4–8

***Viola riviniana* Purpurea Group**
Clump-forming perennial with tiny, flat-faced, purple flowers in spring-summer. Leaves are kidney-shaped and dark purple-green. Invasive but suits a bank, woodland, or wild garden. **H** 1–2in (2.5–5cm), **S** indefinite.

◐ ◊ Z5–8

Jancaea heldreichii
Perennial with rosettes of thick, hairy, silver-green leaves, above which rise slender stems bearing clusters of tiny, lavender-blue flowers in late spring. Rare and difficult to grow and is best in an alpine house. **H** and **S** to 3in (8cm).

◐ ◊ Z5–7

***Viola* 'Bowles's Black'**
Clump-forming perennial with flat-faced, very dark violet, almost black, flowers, borne continuously from spring to fall. Ovate leaves are sometimes lobed and toothed. A short-lived plant; treat as a biennial. **H** 2–6in (5–15cm), **S** 2–3in (5–8cm).

☼ ◊ Z5–8

BLUE

Myosotis alpestris
(Alpine forget-me-not)
Short-lived, clump-forming perennial producing dense clusters of tiny, bright blue flowers with creamy-yellow eyes in late spring and early summer, just above tufts of hairy leaves. Prefers gritty soil.
H and **S** 4–6in (10–15cm).

☼ ◊ Z4–8

Anchusa cespitosa
Evergreen, mound-forming perennial with rosettes of lance-shaped, dark green leaves. In spring, stemless, white-centered, blue flowers are borne in centers of rosettes. Old plants do not flower well; take early summer cuttings.
H 1–2in (2.5–5cm), **S** to 9in (23cm).

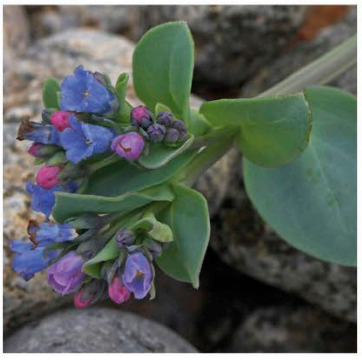
☼ ◊ Z5–7

***Viola cornuta* 'Minor'**
Rhizomatous perennial with ovate, toothed leaves and flat-faced, rather angular, spurred, lavender-blue, occasionally white flowers in spring and much of summer.
H 3–4in (7–10cm), **S** to 6in (15cm).

☼ ◊ Z6–8

Gentiana verna (Spring gentian)
Evergreen perennial, often short-lived, with small rosettes of ovate, dark green leaves. In early spring, tubular, bright blue flowers with white throats are held upright on short stems.
H and **S** to 2in (5cm).

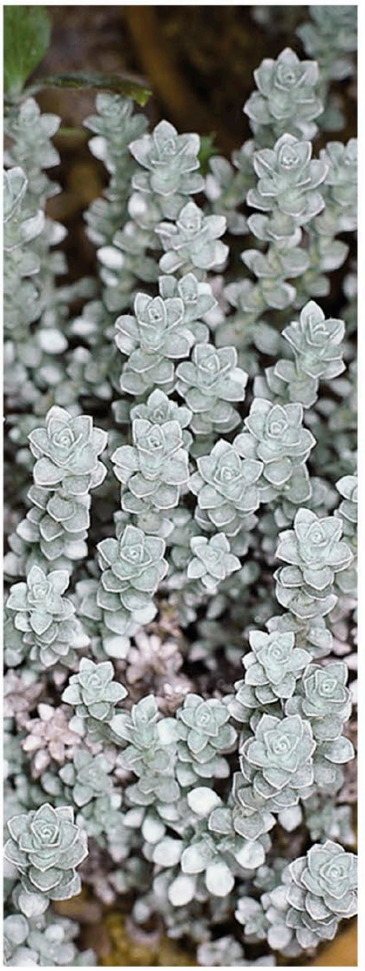
☼ ◊ Z4–7



Mertensia maritima
Prostrate perennial with ovate, fleshy, bright silver-blue or silver-gray leaves. Sturdy stems carry clusters of pendent, funnel-shaped, sky-blue flowers in spring. Prone to slug damage. Needs very sharp drainage. **H** 4–6in (10–15cm), **S** 5in (12cm).

☼ ◊ Z3–7

GRAY



Leucogenes grandiceps
Evergreen, dense, woody-based perennial with neat rosettes of downy, silver leaves. Yellow flower heads, within woolly, white bracts, are borne singly in spring or early summer.
H and **S** 4–6in (10–15cm).

☼ ◊ Z7–8

Salix apoda
Slow-growing, deciduous, prostrate shrub. In early spring, male forms bear fat, silky, silver catkins with orange to pale yellow stamens and bracts. Ovate, leathery leaves are hairy when young, becoming dark green later.
H to 6in (15cm), **S** 12–24in (30–60cm).

☼ ◑ Z7–9

YELLOW

Mandragora officinarum
(Common mandrake, Devil's apple)
Rosetted, fleshy-rooted perennial with coarse, wavy-edged leaves. Bears funnel-shaped, yellowish- or purplish-white flowers in spring, followed by large, tomato-like, shiny yellow fruits.
H 2in (5cm), **S** 12in (30cm).

☼ ◊ Z5–8 ⓘ

Hacquetia epipactis
Clump-forming perennial, spreading by short rhizomes. In late winter and early spring, bears yellow or yellow-green flower heads, encircled by apple-green bracts, before rounded, 3-parted leaves emerge. **H** 2½in (6cm), **S** 6–9in (15–23cm).

☀ ◑ Z5–7

***Saxifraga* x *boydii* 'Hindhead Seedling'**
Evergreen perennial that forms a hard dome of small, tufted, spiny, blue-green leaves. In spring, bears upward-facing, open, cup-shaped, pale yellow flowers, 2 or 3 to each short stem. **H** 1in (25cm), **S** 3in (8cm).

☼ ◊ Z6–8

Draba rigida
Evergreen perennial with tight hummocks of minute, dark green leaves. Tiny clusters of bright yellow flowers on fine stems cover hummocks in spring. Suits a rough scree garden or alpine house. Dislikes winter wet. **H** 1½in (4cm), **S** 2½in (6cm).

☼ ◊ Z4–6

Draba longisiliqua
Semievergreen, cushion-forming perennial composed of firm rosettes of tiny, silver leaves. Bears sprays of small, yellow flowers on long stalks in spring. Needs plenty of water in growth; best grown in an alpine house. **H** 2–3in (5–8cm), **S** 6in (15cm).

☼ ◊ Z4–6

***Saxifraga* x *apiculata* 'Gregor Mendel'**
Evergreen perennial with a tight cushion of bright green foliage. Bears clusters of open, cup-shaped, pale yellow flowers in early spring. **H** 4–6in (10–15cm), **S** 6in (15cm) or more.

◐ ◊ Z6–8

Euphorbia myrsinites
Evergreen, prostrate perennial with terminal clusters of bright yellow-green flowers in spring. Woody stems are clothed in small, pointed, fleshy, gray leaves. Good on a wall or ledge. **H** 2–3in (5–8cm), **S** to 8in (20cm) or more.

☼ ◊ Z5–8 ⓘ

Salix reticulata (Net-veined willow)
Deciduous, spreading, mat-forming shrub. Carries plump, reddish-brown, then yellow catkins on male plants in spring and rounded, slightly crinkled leaves. Likes cool, peaty soil. **H** 2–3in (5–8cm), **S** 8in (20cm) or more.

☼ ◊ Z2–6

***Ficaria verna* Flore Pleno Group**
Mat-forming perennial with heart-shaped, dark green leaves and, in early spring, double, bright yellow flowers with glossy petals. May spread rapidly. Good for a wild garden. **H** 1–2in (2.5–5cm), **S** 8in (20cm).

☼ ◊ Z4–8 ⓘ

Vitaliana primuliflora
Evergreen, prostrate perennial with a mat of rosetted, mid-green leaves that are covered in spring with many small clusters of stemless, tubular, bright yellow flowers. **H** 1in (25cm), **S** 8in (20cm).

☼ 💧Z5–8

***Morisia monanthos* 'Fred Hemingway'**
Prostrate perennial with flat rosettes of divided, leathery, dark green leaves. Produces stemless, flat, bright yellow flowers in late spring and early summer. Needs very sharp drinage. **H** 1in (25cm), **S** to 3in (8cm).

☼ 💧Z7–9

Dionysia tapetodes
Evergreen, prostrate perennial producing a tight mat of tiny, gray-green leaves. Bears small, upward-facing, yellow flowers in early spring. **H** ½in (1cm), **S** to 6in (15cm).

☼ 💧Z5–7

Trollius pumilus
Tufted perennial with leaves divided into 5 segments, each further lobed. Bears solitary cup-shaped, bright yellow flowers in late spring and early summer. **H** 6in (15cm), **S** 6in (15cm) or more.

☼ 💧Z4–6

Erysimum helveticum
Semievergreen, clump-forming perennial with closely-packed tufts of long, narrow leaves and many fragrant, bright yellow flowers borne in flat heads in late spring and early summer. **H** 4in (10cm), **S** 6in (15cm).

☼ 💧Z5–8

Saxifraga sancta
Evergreen, mat-forming perennial with tufts of bright green leaves. Bears short racemes of upward-facing, open cup-shaped, bright yellow flowers in spring. **H** 2in (5cm), **S** 6in (15cm).

☼ 💧Z7–8

Draba mollissima
Semievergreen, cushion-forming perennial with clusters of tiny, yellow flowers on slender stems in spring. Minute leaves form a soft green dome, which should be packed beneath with small stones. Grow in an alpine house. **H** 1½in (4cm), **S** 6in (15cm) or more.

☼ 💧Z4–6

Dionysia aretioides
Evergreen perennial forming cushions of soft, hairy, grayish-green leaves that are covered in early spring by scented, stemless, round, bright yellow flowers. **H** 2–4in (5–10cm), **S** 6–12in (15–30cm).

☼ 💧Z5–7

***Viola* 'Jackanapes'**
Clump-forming perennial with ovate, toothed leaves. Produces flat-faced flowers with reddish-brown, upper petals and yellow, lower ones in late spring and summer. **H** 3–5in (8–12cm), **S** to 8in (20cm) or more.

☼ 💧 Z4–8

Saxifraga aizoides
Evergreen perennial, forming a loose mat, with small, narrowly ovate, fleshy, shiny, green leaves. In spring–summer, produces terminal racemes of star-shaped, bright yellow or orange flowers, often spotted red, on 3in (8cm) stems. **H** 6in (15cm), **S** 12in (30cm) or more.

☼ 💧 Z4–7

Ficaria verna* var. *aurantiacus
Mat-forming perennial bearing, in early spring, cup-shaped, single, orange flowers with glossy petals. Leaves are heart-shaped and mid-green. May spread rapidly. Good for a wild garden. **H** 2in (5cm), **S** 8in (20cm).

☼ 💧 Z4–8 ⓘ

Silene alpestris
Perennial with branching stems and narrow leaves. Bears small, rounded, fringed, white, occasionally pink-flushed flowers in late spring and early summer. Self-seeds freely. **H** 4–6in (10–15cm), **S** 8in (20cm).

☼ 💧 Z4–7

***Phlox stolonifera* 'Ariane'**
Evergreen, low-growing perennial with flowering sideshoots that bear heads of open, saucer-shaped, white blooms in early summer. Has ovate, pale green leaves. Cut back flowered shoots by half after flowering. **H** to 6in (15cm), **S** 12in (30cm).

◑ 💧 pH Z4–8

Achillea clavennae
Semievergreen, carpeting perennial that bears loose clusters of white flower heads with gold centers from summer to midfall. Leaves are narrowly ovate, many-lobed and covered with fine, white hairs. Dislikes winter wet. **H** 6in (15cm), **S** 9in (23cm) or more.

☼ 💧 Z3–8 ⓘ

***Haberlea rhodopensis* 'Virginalis'**
Evergreen perennial with small, arching sprays of funnel-shaped, pure white flowers borne in late spring and early summer above neat rosettes of ovate, toothed, dark green leaves. **H** and **S** in flower 4–6in (10–15cm).

◑ 💧 Z5–7

Potentilla alba
Vigorous, mat-forming perennial bearing loose sprays of flat, single, white flowers in summer. Leaves are divided into ovate leaflets and are silvery beneath. **H** 2–3in (5–8cm), **S** 3in (8cm).

☼ 💧 Z5–8

***Cyananthus lobatus* 'Albus'**
Prostrate perennial with branched stems clothed in small, wedge-shaped, dull green leaves. Bears funnel-shaped, single, white flowers with spreading lobes in late summer. **H** 3in (8cm), **S** 12in (30cm).

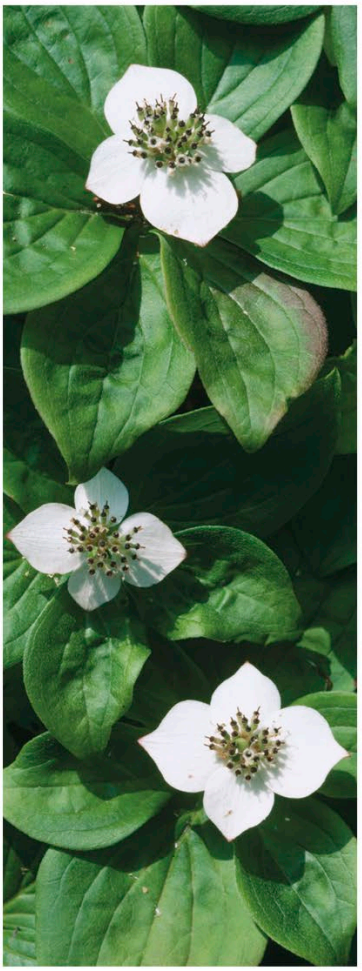
◑ 💧 Z6–7

Campanula carpatica* f. *alba
Clump-forming perennial producing abundant, rounded, mid-green leaves. Broadly bell-shaped, white flowers, 1¼in (3cm) across, are borne singly on unbranched stems, in summer.
H 4–6in (10–15cm), **S** 6in (15cm).

☼ ◊ Z4–7

Arenaria montana
Prostrate perennial that forms loose mats of small, narrowly ovate leaves and bears large, round, white flowers in summer. Suits a wall or rock crevice. Must have adequate moisture.
H 2in (5cm), **S** 5in (12cm).

☼ ◊ Z3–5



Cornus canadensis
(Bunchberry)
Groundcover perennial with whorls of ovate leaves. In late spring and early summer, bears green, sometimes purple-tinged flowers, within white bracts, followed by red berries. **H** 4–6in (10–15cm), **S** 12in (30cm) or more.

☼ ◊ pH Z2–7 !

Iberis saxatilis
Evergreen, dwarf subshrub that, in late spring and early summer, produces large heads of numerous small, white flowers, which become tinged violet with age. Glossy, dark leaves are linear and cylindrical. Trim after flowering.
H 3–5in (8–12cm), **S** 12in (30cm).

☼ ◊ Z7–9

Celmisia ramulosa
Evergreen, shrubby perennial with small, hairy, gray-green leaves. Daisy-like, white flower heads are borne singly on short stems in late spring and early summer. **H** and **S** 4in (10cm).

☼ ◊ pH Z7–8

Ourisia caespitosa
Evergreen, prostrate perennial with creeping rootstocks and stems bearing tiny, ovate leaves and many outward-facing, open cup-shaped, white flowers in late spring and early summer.
H 1in (25cm), **S** 4in (10cm).

☀ ◊ Z5–7

Anacyclus pyrethrum* var. *depressus
Short-lived, prostrate perennial that has white flower heads, with red reverses to ray petals, in summer. Flowers close in dull light. Stems are clothed in fine leaves. Dislikes wet. **H** 1–2in (2.5–5cm) or more, **S** 4in (10cm).

☼ ◊ Z3–8

Lewisia rediviva [white form]
(Bitterroot)
Tufted, rosetted perennial with clusters of fine, narrow leaves that are summer-deciduous. Bears large, white flowers that open in bright weather in late spring and early summer.
H ½–1½in (1–4cm), **S** to 2in (5cm).

☼ ◊ pH Z4–7

Epilobium glabellum of gardens
Mat- or clump-forming, semievergreen perennial with elliptic to ovate, finely toothed, deep green leaves. Cup-shaped, creamy-white to pink flowers are borne on branching stems in summer.
H and **S** 8in (20cm).

☼ ◊ Z5–8

Nierembergia repens
Mat-forming perennial with upright, open bell-shaped, yellow-centered, white flowers, occasionally flushed pink with age, borne for a long period in summer. Leaves are small, ovate, and light green. Useful for cracks in paving. **H** 2in (5cm), **S** 8in (20cm) or more.

☼ ◊ Z7–11

Petrocosmea kerrii
Evergreen perennial with compact rosettes of ovate, pointed, hairy, rich green leaves. In summer, bears clusters of short, outward-facing, tubular, open-mouthed white flowers. Suits an alpine house. **H** to 3in (8cm), **S** 5–6in (12–15cm). Min. 41°F (5°C).

☀ ◊ Z10–11

Dryas octopetala
Evergreen, prostrate perennial forming mats of ovate, lobed, leathery, dark green leaves on sturdy stems. In late spring and early summer, cup-shaped, creamy-white flowers are borne just above foliage, followed by attractive, feathery seeds. **H** 2½in (6cm), **S** indefinite.

☼ ◊ Z3–6

Penstemon hirsutus* var. *pygmaeus
Short-lived, evergreen, compact subshrub that bears tubular, lipped, hairy, purple- or blue-flushed, white flowers in summer. Has tightly packed, dark green leaves and is suitable for a trough. **H** and **S** 3in (8cm).

☼ ◊ Z3–9

Carlina acaulis (Alpine thistle)
Clump-forming perennial that in summer-fall bears large, stemless, thistlelike, single, off-white or pale brown flower heads, with papery bracts, on rosettes of long, spiny-margined, deeply-cut leaves. **H** 3–4in (8–10cm), **S** 6–9in (15–23cm).

☼ ◊ Z5–7

Alstroemeria hookeri
Dwarf, tuberous perennial with narrow, gray-green leaves. Bears loose umbels of 1–3 widely flared, pink flowers in summer; inner petals have yellow flashes and are streaked with purple. **H** 4–6in (10–15cm), **S** 18–24in (45–60cm).

☼ ◊ Z8–10 ⓘ

Petrorhagia saxifraga (Tunic flower)
Mat-forming perennial with tufts of grasslike leaves. In summer, bears a profusion of small, pale pink flowers, veined deeper pink, on slender stems. Grows best on poor soil and self-seeds easily. **H** 4in (10cm), **S** 6in (15cm).

☼ ◊ Z5–7

***Gypsophila repens* 'Dorothy Teacher'**
Semievergreen, prostrate perennial. Sprays of small, rounded, white flowers, which age to deep pink, cover mats of narrow, bluish-green leaves in summer. Trim stems after flowering. **H** 1–2in (2.5–5cm), **S** 12in (30cm) or more.

☼ ◊ Z4–7

Convolvulus althaeoides
Vigorous perennial with long, trailing stems clothed in heart-shaped, cut, mid-green leaves, overlaid silver. Bears large, open trumpet-shaped pink flowers in summer. May be invasive in a mild climate. **H** 2in (5cm), **S** indefinite.

☼ ◊ Z6–8

Geranium sanguineum* var. *striatum
Hummock-forming, spreading perennial that has cup-shaped, pink flowers, with darker veins, borne singly in summer above round, deeply divided, dark green leaves. **H** 4–6in (10–15cm), **S** 12in (30cm) or more.

☼ ◊ Z3–8

***Rhodohypoxis baurii* 'Margaret Rose'**
Perennial with a tuberlike rootstock and an erect, basal tuft of narrowly lance-shaped, hairy leaves. Bears a succession of upright, flattish, pale pink flowers on slender stems in spring and early summer. **H** 2–4in (5–10cm), **S** 1–2in (2.5–5cm).

☼ ◊ Z9–10

Ourisia microphylla
Semievergreen, mat-forming perennial, with neat, scalelike, pale green leaves, bearing a profusion of small, pink flowers in late spring and early summer. Difficult to grow in an arid climate. **H** 2–4in (5–10cm), **S** 6in (15cm).

☀ ◑ Z7–9

Asperula suberosa
Clump-forming perennial with a mound of loose stems bearing tiny, hairy, gray leaves and, in early summer, many tubular, pale pink flowers. Dislikes winter wet but needs moist soil in summer. Best in an alpine house. **H** 3in (8cm), **S** to 12in (30cm).

☼ ◑ Z5–7

Erodium corsicum
Compact, clump-forming perennial that has soft, gray-green leaves with wavy margins. Bears flat-faced, pink flowers, with darker veins, on stiff, slender stems in late spring and summer. Best in an alpine house as it dislikes winter wet. **H** 3in (8cm), **S** 6in (15cm).

☼ ◊ Z4–7

Saponaria* x *olivana
Compact perennial with a firm cushion of narrow leaves. Flowering stems, produced around edges of the cushion, bear flat, single, pale pink flowers in summer. Needs very sharp drainage. **H** 3in (8cm), **S** 4in (10cm).

☼ ◊ Z4–8

***Aethionema* 'Warley Rose'**
Short-lived, evergreen or semievergreen, compact subshrub with tiny, linear, bluish-gray leaves. Bears racemes of small, pink flowers on short stems in profusion in spring-summer. **H** and **S** 6in (15cm).

☼ ◊ Z6–8

***Phlox adsurgens* 'Wagon Wheel'**
Evergreen, prostrate perennial forming wide mats of woody stems, clothed in ovate leaves. Bears heads of wheel-shaped, pink flowers with narrow petals in summer. Needs humus-rich soil. **H** 4in (10cm), **S** 12in (30cm).

☀ ◑ 💧 pH Z4–8

Linnaea borealis (Twin flower)
Evergreen, mat-forming, subshrubby perennial with rooting stems bearing small, ovate leaves, above which in summer rise threadlike stems bearing pairs of small, fragrant, tubular, pale pink and white flowers. **H** ¾in (2cm), **S** 12in (30cm) or more.

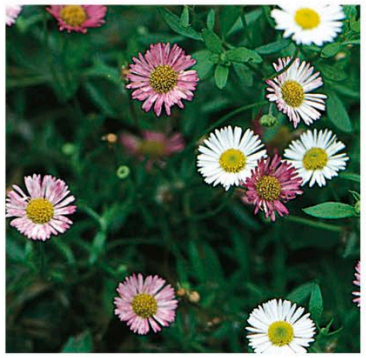
☀ ◑ 💧 pH Z6–9

Geranium dalmaticum
Prostrate, spreading perennial with outward-facing, almost flat, shell-pink flowers borne in summer above divided, dark green leaves. Will grow taller in partial shade and is evergreen in all but severest winters. **H** 3–4in (8–10cm) or more, **S** 5–8in (12–20cm).

☀ 💧 Z5–7

Acantholimon glumaceum
Evergreen, cushion-forming perennial with hard, spiny, dark green leaves and short spikes of small, star-shaped, pink flowers in summer. **H** 4in (10cm), **S** 8in (20cm).

☀ 💧 Z7–9



Erigeron karvinskianus
Spreading perennial with lax stems bearing narrow, lance-shaped, hairy leaves and, in summer-fall, daisylike flower heads that open white, turn pink and fade to purple. **H** 4–6in (10–15cm), **S** indefinite.

☀ 💧 Z5–7

Dianthus pavonius
Evergreen, prostrate perennial with comparatively large, rounded, pale to deep pink flowers, buff on reverses, borne on short stems in summer above low mats of spiky leaves. **H** 2in (5cm), **S** 3in (8cm).

☀ 💧 pH Z3–8

Androsace lanuginosa
Evergreen, trailing perennial with loose stems, covered in silky hairs, bearing deep green leaves and, in summer, clusters of small, flat, lilac-pink or pale pink flowers with dark pink or yellow eyes. **H** 1½in (4cm), **S** to 7in (18cm).

☀ 💧 Z5–7

***Dianthus* 'Little Jock'**
Evergreen, compact, clump-forming perennial with spiky, silvery-green foliage. In summer, produces strongly fragrant, rounded, semidouble, pink flowers, with darker eyes, above foliage. **H** and **S** 4in (10cm).

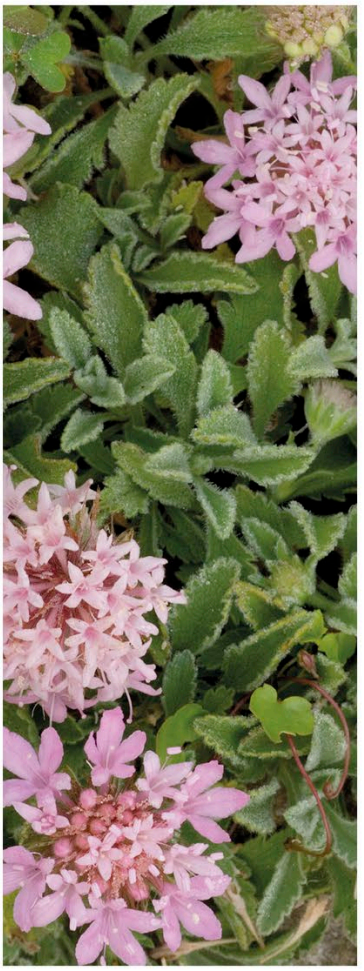
☀ 💧 Z5–9

Dianthus gratianopolitanus
(Cheddar pink)
Evergreen perennial with loose mats of narrow, gray-green leaves. In summer, produces very fragrant, flat, pale pink flowers on slender stems. **H** to 6in (15cm), **S** to 12in (30cm).

☀ 💧 Z4–8

Kalmia procumbens
(Alpine azalea, Trailing azalea)
Evergreen, prostrate shrub with small, ovate leaves, hairy and beige beneath. Produces terminal clusters of open funnel-shaped, rose-pink to white flowers in early summer. **H** to 3in (8cm), **S** 4–6in (10–15cm).

☼ 💧 pH Z2–5



Pterocephalus perennis
Semievergreen, mat-forming perennial with crinkled, hairy leaves. Bears tight, rounded heads of tubular, pinkish-lavender flowers, singly on short stems in summer, followed by feathery seed heads. **H** 2in (5cm), **S** 4in (10cm).

☼ 💧 Z5–7

Saponaria ocymoides (Rock soapwort)
Perennial with compact or loose, sprawling mats of hairy, ovate leaves, above which a profusion of tiny, flat, pale pink to crimson flowers are borne in summer. Excellent on a dry bank. **H** 1–3in (2.5–8cm), **S** 16in (40cm).

☼ 💧 Z4–8

Oxalis depressa
Tuberous perennial with 3-lobed leaves and short-stemmed, widely funnel-shaped, bright rose-pink flowers, ¾in (2cm) across, in summer. Needs a sheltered site or cool greenhouse. **H** 2in (5cm), **S** 3–4in (8–10cm).

☼ 💧 Z7–10

***Dianthus* 'Pike's Pink'**
Evergreen, compact, cushion-forming perennial with spiky, gray-green foliage. Produces fragrant, rounded, double, pink flowers in summer. **H** and **S** 4in (10cm).

☼ 💧 Z5–8

Dianthus myrtinervius
Evergreen, spreading perennial with numerous small, rounded, pink flowers that are produced in summer above tiny, grasslike leaves. **H** 2in (5cm), **S** 8in (20cm).

☼ 💧 Z4–9

Aethionema armenum
Short-lived, evergreen or semievergreen, dense subshrub with narrow, blue-green leaves. Produces loose sprays of tiny, pale to deep pink flowers in summer. **H** and **S** 6in (15cm).

☼ 💧 Z7–9

Saponaria caespitosa
Mat-forming perennial with small, lance-shaped leaves. Tiny, flat, single, pink to purple flowers are borne in small heads in summer. Needs very sharp drainage. **H** 3in (8cm), **S** 4in (10cm).

☼ 💧 Z4–8

Dianthus alpinus (Alpine pink)
Evergreen, compact perennial that bears comparatively large, rounded, rose-pink to crimson flowers, singly in summer, above mats of narrow, dark green foliage. Likes humus-rich soil. **H** 2in (5cm), **S** 3in (8cm).

☼ 💧 Z4–8

***Dianthus alpinus* 'Joan's Blood'**
Evergreen, cushion-forming perennial with narrow, glossy, dark green leaves. Bears single, deep magenta-pink flowers, to 1½in (4cm) across, with crimson centers and toothed petals, in summer. **H** 2in (5cm), **S** 3in (8cm).

☼ 💧 Z3–9

***Phlox nivalis* 'Camlaensis'**
Evergreen, mound-forming perennial with wiry, arching stems and fine leaves. A profusion of open saucer-shaped, rich pink flowers are borne in early summer. Trim after flowering. Needs humus-rich soil. **H** 5in (12cm), **S** 12in (30cm).

☼ ◊ Z6–8

***Phlox subulata* 'Marjorie'**
Evergreen, mound-forming perennial with fine leaves and a profusion of flat, star-shaped, bright rose-pink flowers in early summer. Trim after flowering. **H** 4in (10cm), **S** 8in (20cm).

☼ ◊ Z3–8

***Dianthus* 'La Bourboule'**
Evergreen perennial with small clumps of tufted, spiky foliage. Bears a profusion of strongly fragrant, small, single, pink flowers in summer. **H** 2in (5cm), **S** 3in (8cm).

☼ ◊ Z5–9

***Persicaria affinis* 'Donald Lowndes'**
Evergreen, mat-forming perennial that has sturdy, branching, spreading stems clothed with pointed leaves. In summer, bears dense spikes of small, red flowers, which become paler with age. **H** 3–6in (8–15cm), **S** to 6in (15cm).

☼ ◑ Z3–8 ⓘ

***Phlox douglasii* 'Crackerjack'**
Evergreen, compact, mound-forming perennial. Bears a profusion of saucer-shaped, bright crimson or magenta flowers in early summer. Leaves are lance-shaped and mid-green. Cut back after flowering. **H** to 3in (8cm), **S** 8in (20cm).

☼ ◊ Z5–7

***Armeria maritima* 'Vindictive'**
Evergreen, clump-forming perennial with grasslike, dark blue-green leaves, above which rise stiff stems bearing spherical heads of small, deep rose-pink flowers for a long period in summer. **H** 4in (10cm), **S** 6in (15cm).

☼ ◊ Z3–9

Lewisia rediviva [pink form] (Bitterroot)
Tufted, rosetted perennial. Clusters of narrow leaves are summer-deciduous. Large, many-petaled, pink flowers open on bright days in late spring and early summer. Suits an alpine house. **H** ½–1½in (1–4cm), **S** to 2in (5cm).

☼ ◊ pH Z4–7

***Rhodohypoxis baurii* 'Albrighton'**
Perennial with tuberlike rootstock and an erect, basal tuft of narrowly lance-shaped, hairy leaves. Bears a succession of erect, deep pink flowers singly on slender stems in spring and early summer. **H** 2–4in (5–10cm), **S** 1–2in (2.5–5cm).

☼ ◊ Z9–10

***Dianthus deltoides* 'Leuchtfunk'**
Evergreen, mat-forming perennial. Many small, flat, upward-facing, brilliant cerise flowers are borne singly above tiny, oblong, pointed leaves. **H** 4–6in (10–15cm), **S** 8in (20cm).

☼ ◊ Z3–10

***Thymus* 'Bressingham'**
Evergreen, mat-forming, aromatic subshrub with creeping stems and elliptic, white-hairy, mid-green leaves. Bears numerous, small, 2-lipped, purple-pink flowers, splashed dark crimson, in summer. **H** 1¼in (3cm), **S** 5in (12cm).

☼ ◊ Z6–9

PINK

Phlox bifida (Sand phlox)
Evergreen, mound-forming perennial with lance-shaped leaves. Bears a profusion of small heads of star-shaped, lilac or white flowers with deeply cleft petals in summer. Cut back stems by half after flowering. **H** 4–6in (10–15cm), **S** 6in (15cm).

☼ 💧Z4–8

Geranium cinereum **'Ballerina'**
Spreading, rosetted perennial that bears cup-shaped, purplish-pink flowers, with deep purple veins, on lax stems in late spring and summer. Basal leaves are round, deeply divided and soft. **H** 4in (10cm), **S** 12in (30cm).

☼ 💧Z5–9

Dianthus microlepis
Evergreen perennial with tiny tufts of minute, fine, grasslike leaves, above which rise numerous small, rounded, pink flowers in early summer. Best suited to a trough. **H** 2in (5cm), **S** 8in (20cm).

☼ 💧Z5–9

PURPLE

Thymus caespititius
Compact, cushion-forming, aromatic subshrub with upright stems covered in small, prominently veined, dark-green leaves. In early summer, bears lilac or mauve flowers in dense rounded heads. **H** 6in (15cm), **S** 8in (20cm).

☼ 💧Z4–9

Androsace villosa **var. *jacquemontii***
Evergreen, mat-forming perennial with small rosettes of hairy, gray-green leaves. Bears tiny, pinkish-purple flowers on red stems in late spring and early summer. Suits an alpine house. **H** ½–1½in (1–4cm), **S** 8in (20cm).

☼ 💧Z5–7

Teucrium polium
Deciduous, dome-shaped subshrub that has much-branched, woolly, white or yellowish stems and leaves with scalloped margins. Bears yellowish-white or pinkish-purple flowers in flat heads in summer. Requires very sharp drainage. **H** and **S** 6in (15cm).

☼ 💧Z8–9

Geranium subcaulescens
Spreading perennial with round, deeply divided, soft leaves. In summer, bears brilliant purple-magenta flowers, with striking, black eyes and stamens, on lax stems. **H** 4in (10cm), **S** 12in (30cm).

☼ 💧Z4–9

Phlox douglasii **'Boothman's Variety'**
Evergreen, mound-forming perennial with lance-shaped leaves and bearing abundant, pale lavender-blue flowers, with violet-blue markings around eyes, in early summer. Cut back after flowering. **H** to 2in (5cm), **S** 8in (20cm).

☼ 💧Z5–7

Physoplexis comosa
Tufted perennial with deeply cut leaves and round heads of bottle-shaped, violet-blue, rarely white, flowers in summer. Suits crevices but dislikes winter wet. **H** 3in (8cm), **S** 4in (10cm).

☼ 💧Z5–7

Aster alpinus
Clump-forming, spreading perennial with lance-shaped, dark green leaves. Bears daisylike, purplish-blue or pink-purple flower heads, with yellow centers, from mid- to late summer.
H 6in (15cm), **S** 12–18in (30–45cm).

☼ 💧 Z4–8

***Thymus* 'Peter Davis'**
Evergreen, aromatic, mound-forming subshrub with fine, twiggy stems and narrow leaves fringed with white hairs. Bears dense heads of small, pinkish-purple flowers with purple bracts in summer. **H** 4–5in (10–12cm), **S** 6in (15cm).

☼ 💧 Z6–9

***Viola* 'Nellie Britton'**
Clump-forming perennial with small, ovate, toothed leaves and flat-faced, lavender-pink flowers borne from late spring to late summer. Soil should not be too dry.
H 3–6in (8–15cm), **S** to 8in (20cm).

☼ 💧 Z5–11

Edraianthus serpyllifolius
Evergreen, prostrate perennial with tight mats of tiny leaves and small, bell-shaped, deep violet flowers, borne on short stems in early summer. Seldom sets seed in gardens. **H** ½in (1cm), **S** to 2in (5cm).

☼ 💧 Z7–9

***Campanula carpatica* var. *tubinata* 'Jewel'**
Low-growing, clump-forming perennial with mid-green, toothed leaves on branching stems. Bright, purple-blue, upturned, bell-shaped flowers are borne over several months in summer.
H and **S** 4–6in (10–15cm).

☼ 💧 Z4–7

***Phlox subulata* 'Emerald Cushion'**
Evergreen perennial with emerald-green mounds of fine leaves, studded in late spring and early summer with large, saucer-shaped, bright violet-blue flowers. Trim after flowering.
H 3in (8cm), **S** 6in (15cm).

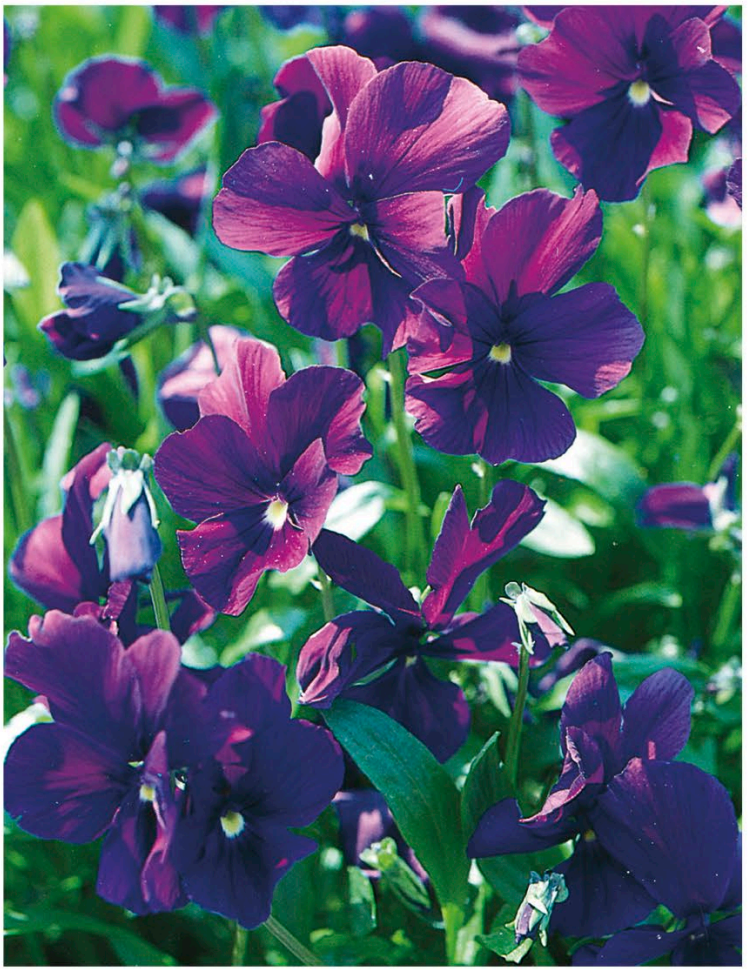
☼ 💧 Z3–8

Campanula poscharskyana
Rampant, spreading perennial with bell-shaped, violet flowers borne on leafy stems in summer. Leaves are round with serrated edges. Vigorous runners make it suitable for a bank or a wild garden. **H** 4–6in (10–15cm), **S** indefinite.

☼ 💧 Z3–9

Globularia meridionalis
Evergreen, dome-shaped subshrub. In summer, globular, fluffy, lavender to lavender-purple flower heads are borne singly just above glossy leaves.
H to 4in (10cm), **S** to 8in (20cm).

☼ 💧 Z5–7



***Viola* 'Huntercombe Purple'**
Perennial forming wide clumps of neat, ovate, toothed leaves. Bears a profusion of flat-faced, rich violet flowers from spring to late summer. Divide clumps every 3 years. **H** 4–6in (10–15cm), **S** 6–12in (15–30cm) or more.

☼ ◊ Z5–7

Campanula portenschlagiana
(Dalmation bellflower)
Vigorous, evergreen, prostrate perennial with dense mats of small, ivy-shaped leaves and large clusters of erect, open bell-shaped, violet flowers in summer. **H** 6in (15cm), **S** indefinite.

☼ ◊ Z4–7

***Campanula* x *pulloides* 'G.F. Wilson'**
Neat, mound-forming perennial with large, upturned, bell-shaped, violet flowers in summer. Has rounded, pale yellow-green leaves. **H** 3–4in (8–10cm), **S** 5–6in (12–15cm).

☼ ◊ Z4–7

Pinguicula grandiflora
Clump-forming perennial with a basal rosette of sticky, ovate, pale green leaves. In summer, produces spurred, open funnel-shaped, violet-blue to purple flowers singly on upright, slender stems. **H** 5–6in (12–15cm), **S** 2in (5cm).

☼ ◆ Z3–5

Aquilegia jonesii
Compact perennial that bears short-spurred, violet-blue flowers in summer, a few to each slender stem. Has small rosettes of finely divided, blue-gray or gray-green leaves. Suitable for an alpine house only. **H** 1in (25cm), **S** to 2in (5cm).

☼ ◊ Z4–8 ⓘ

Prunella grandiflora
(Large self-heal)
Semievergreen, spreading, mat-forming perennial with basal rosettes of leaves. In midsummer, bears short spikes of funnel-shaped, purple flowers in whorls. **H** 4–6in (10–15cm), **S** 12in (30cm).

☼ ◆ Z5–7

***Campanula* 'Birch Hybrid'**
Vigorous, evergreen perennial with tough, arching, prostrate stems and ivy-shaped, bright green leaves. Bears many open bell-shaped, deep violet flowers in summer. **H** 4in (10cm), **S** 12in (30cm) or more.

☼ ◊ Z4–7

Edraianthus pumilio
Short-lived perennial with low tufts of fine, grasslike leaves. In early summer, upturned, bell-shaped, pale to deep lavender flowers, on very short stems, are produced amid foliage. **H** 1in (25cm), **S** 3in (8cm).

☼ ◊ Z6–8

Cyananthus microphyllus
Mat-forming perennial with very fine, red stems clothed in tiny leaves. Bears funnel-shaped, violet-blue flowers at the end of each stem in late summer. Likes humus-rich soil. **H** ¾in (2cm), **S** 8in (20cm).

☼ ◊ Z5–7

Ramonda myconi
Evergreen, rosette-forming perennial with hairy, crinkled leaves and, in late spring and early summer, flat, blue-mauve, pink or white flowers, borne on branched stems. **H** 3in (8cm), **S** to 4in (10cm).

☀ ◑ Z5–7

Campanula cochleariifolia
(Fairy thimbles)
Spreading perennial. Runners produce mats of rosetted, tiny, round leaves. Bears small clusters of white, lavender, or pale blue flowers in summer on many thin stems above foliage. **H** 3in (8cm), **S** indefinite.

☼ ◊ Z5–7

Townsendia grandiflora
Short-lived, evergreen perennial with basal rosettes of small, spoon-shaped leaves. Upright stems bear solitary daisylike, violet or violet-blue flower heads in late spring and early summer. **H** to 6in (15cm), **S** 4in (10cm).

☼ ◑ Z4–7

***Polygala calcarea* 'Lillet'**
Evergreen, prostrate, very compact perennial with rosettes of small, narrowly ovate leaves and loose heads of bright blue flowers in spring and early summer. Likes humus-rich soil. Suits a trough. **H** 1in (25cm), **S** 3–4in (8–10cm).

☼ ◊ Z7–9

Hedyotis michauxii
(Creeping bluets)
Vigorous perennial with rooting stems. Produces mats of mid-green foliage studded with star-shaped, violet-blue flowers in late spring and early summer. **H** 3in (8cm), **S** 12in (30cm).

☀ ◑ Z3–8

Sisyrinchium idahoense
Semievergreen, upright, clump-forming perennial that for a long period in summer and early fall has many flowering stems bearing tiny tufts of irislike, blue to violet-blue flowers. Foliage is grasslike. Self-seeds readily. **H** to 5in (12cm), **S** 4in (10cm).

☼ ◊ Z7–8

Globularia cordifolia
Evergreen, mat-forming, dwarf shrub with creeping, woody stems clothed in tiny, ovate leaves. Bears stemless, round, fluffy, blue to pale lavender-blue flower heads in summer. **H** 1–2in (2.5–5cm), **S** to 8in (20cm).

☼ ◊ Z5–7

Pratia pedunculata
Vigorous, evergreen, creeping perennial with small leaves and a profusion of star-shaped, pale to mid-blue or occasionally purplish-blue flowers borne in summer. Makes good groundcover in a moist site. **H** ½in (1cm), **S** indefinite.

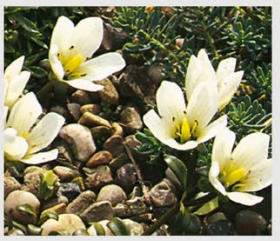
☀ ◑ Z5–7

Trachelium asperuloides
Mat-forming perennial with threadlike stems clothed in minute, mid-green leaves, above which rise many tiny, upright, tubular, pale blue flowers in summer. Do not remove old stems in winter. **H** 3in (8cm), **S** to 6in (15cm).

☼ ◊ Z8–13

GENTIANS

Although there are gentians (*Gentiana*) large enough to hold their own in the herbaceous border, most are low-growing, deciduous or evergreen perennials, best suited to rock gardens, where they can form spreading mats. Flowering between spring and fall, they are renowned for their vivid blue, trumpet-shaped flowers, which are produced in pale shades (see as those of *G.* 'Strathmore') to intensely dark ones (such as *G. acaulis),* although there are also white and yellow-flowered forms. All require a cool position, sheltered from hot summer sun. Most need light, rich, moist but well-drained neutral soil; fall-flowering species and cultivars, such as *G. sino-ornata,* require acidic conditions to thrive. Protect from slugs and snails, particularly in spring.



G. saxosa

***G.* 'Ettrick'**

***G.* 'Strathmore'**

***G.* 'Soutra'**

***G.* 'Eugen's Allerbester'**

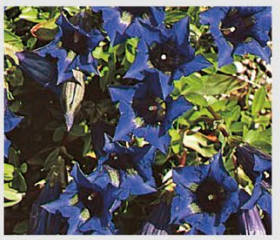
***G.* 'Blue Silk'**

***G.* 'Shot Silk'**

***G.* 'Inverleith'**

G. sino-ornata

***G.* x *macaulayi* 'Wells's Variety'**



G. acaulis

SMALL

SUMMER

BLUE

Eritrichium nanum

Clump-forming perennial with tufts of hairy, gray-green leaves. Bears small, stemless, flat, pale blue flowers in late spring and early summer. Requires sharp drainage. Only suitable for an alpine house. **H** ¾in (2cm), **S** 1in (25cm).

☼ ◊ Z5–7

Parochetus communis

(Shamrock pea)

Evergreen, prostrate perennial with cloverlike leaves and pealike, brilliant blue flowers that are borne almost continuously. Grows best in an alpine house. **H** 1–2in (2.5–5cm), **S** indefinite.

◑ ◊ Z8–11

Polygala calcarea

Evergreen, prostrate, occasionally upright, perennial. Has small, narrowly ovate leaves and pale to dark blue flowers in late spring and early summer. Likes humus-rich soil. Suits a trough. May be difficult to establish. **H** 1in (25cm), **S** to 6in (15cm).

☼ ◊ Z7–9

GREEN

Mitella breweri
Neat, clump-forming, rhizomatous perennial with slender, hairy stems bearing small, pendent, tubular, greenish-white flowers, with flared mouths, in summer. Has lobed, kidney-shaped, green basal leaves.
H and **S** 6in (15cm).

☀ ◑ Z5–7

Gunnera magellanica
Mat-forming perennial, grown for its rounded, toothed leaves, often bronze-tinged when young, on short, creeping stems. Small, green, unisexual flowers, with reddish-bracts, are borne on male and female plants. Likes peaty soil.
H 1in (25cm), **S** to 12in (30cm).

◑ ◑ Z8–9

YELLOW

Polygala chamaebuxus
Evergreen, woody-based perennial with tiny, hard, dark green leaves. In late spring and early summer, bears many racemes of small, pealike, white-and-yellow flowers, sometimes marked brown. Needs humus-rich soil.
H 2in (5cm), **S** 8in (20cm).

◑ ◑ Z6–9

Asarina procumbens
Semievergreen perennial with trailing stems bearing soft, hairy leaves and tubular, pale cream flowers, with yellow palates, throughout summer. Dislikes winter wet. Self-seeds freely.
H ½–1in (1–2.5cm), **S** 9–12in (23–30cm).

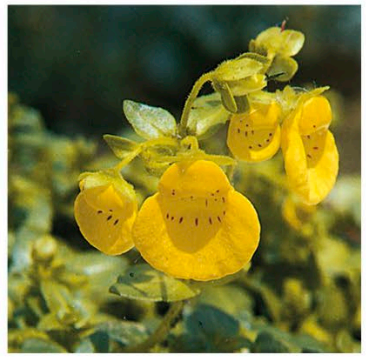
☼ ◑ Z6–9

***Sedum acre* 'Aureum'**
Evergreen, mat-forming perennial with spreading shoots, yellow-tipped in spring and early summer, clothed in tiny, fleshy, yellow leaves. Has flat heads of tiny, yellow flowers in summer. Invasive but easy to control.
H 1–2in (2.5–5cm), **S** to 9in (23cm).

☼ ◑ Z3–8 ⓘ

Sedum acre
(Biting stonecrop, Common stonecrop)
Evergreen, mat-forming perennial with dense, spreading shoots and tiny, fleshy, pale green leaves. Bears flat, terminal heads of tiny, yellow summer flowers. Invasive but easily controlled.
H 1–2in (2.5–5cm), **S** indefinite.

☼ ◑ Z3–8 ⓘ



Calceolaria tenella
Vigorous, evergreen, prostrate perennial with creeping, reddish stems and ovate, mid-green leaves, above which rise small spikes of pouch-shaped, red-spotted, yellow flowers in summer. **H** 4in (10cm), **S** indefinite.

☼ ◑ Z7–8

Oxalis perdicaria
Clump-forming perennial with woolly-coated tubers. Mid-green leaves have up to 5 rounded lobes. Produces racemes of widely funnel-shaped, bright yellow flowers, ½–¾in (1–2cm) across, in late summer and fall. **H** 2in (5cm), **S** 3–4in (8–10cm).

☼ ◑ Z8–9

Waldsteinia ternata
Semievergreen perennial with loose, spreading mats of toothed, 3-parted leaves. Bears saucer-shaped, yellow flowers in late spring and early summer. Good on a bank. **H** 4in (10cm), **S** 8–12in (20–30cm).

☼ 💧Z3–8

***Lysimachia nummularia* 'Aurea'**
(Golden creeping Jenny)
Prostrate perennial. Creeping, rooting stems bear pairs of round, soft yellow leaves, which later turn greenish-yellow or green in dense shade. Produces bright yellow flowers in leaf axils in summer. **H** 1–2in (2.5–5cm), **S** indefinite.

☼ 💧Z4–8

Scutellaria orientalis
Rhizomatous perennial with hairy, gray, rooting stems. Bears terminal spikes of tubular, yellow flowers, with purple-tinted basal bracts, in summer. Leaves are toothed and ovate. May be invasive in a small space. **H** 2–4in (5–10cm), **S** to 9in (23cm).

☼ 💧Z5–8

***Linum flavum* 'Compactum'**
Shrubby perennial with narrow leaves and terminal clusters of many upward-facing, open funnel-shaped, single, bright yellow flowers in summer. Provide a sunny, sheltered position and protection from winter wet. **H** and **S** 6in (15cm).

☼ 💧Z5–7

Potentilla eriocarpa
Clump-forming perennial with tufts of ovate, dark green leaves divided into leaflets. Flat, single, pale yellow flowers are borne throughout summer just above leaves. **H** 2–3in (5–8cm), **S** 4–6in (10–15cm).

☼ 💧Z6–8

Cytisus ardoinoi
Deciduous, hummock-forming, dwarf shrub with arching stems. In late spring and early summer, pealike, bright yellow flowers are produced in pairs in leaf axils. Leaves are divided into 3 leaflets. **H** 4in (10cm), **S** 6in (15cm).

☼ 💧Z6–8 ⓘ

Potentilla aurea
Rounded perennial, with a woody base, that in late summer bears loose sprays of flat, single, yellow flowers with slightly darker eyes. Leaves are divided into ovate, slightly silvered leaflets. **H** 4in (10cm), **S** 8in (20cm).

☼ 💧Z5–8

Oenothera macrocarpa
Spreading perennial with sturdy stems and ovate leaves. Throughout summer bears a succession of wide, bell-shaped, yellow flowers, sometimes spotted red, that open at sundown. **H** to 4in (10cm), **S** to 16in (40cm) or more.

☼ 💧Z5–8

***Calceolaria* 'Walter Shrimpton'**
Evergreen, mound-forming perennial with glossy, dark green leaves. In early summer, bears short spikes of many pouch-shaped, bronze-yellow flowers, spotted rich brown, with white bands across centers. **H** 4in (10cm), **S** 9in (23cm).

☼ 💧Z8–9

Papaver fauriei
Short-lived, clump-forming perennial with basal rosettes of finely cut, hairy, soft gray leaves. Bears pendent, open cup-shaped, pale yellow flowers in summer. Dislikes winter wet.
H and **S** 2–4in (5–10cm).

☼ 💧 Z5–7

Hypericum cerastioides
Vigorous, evergreen subshrub with upright and arching branches. Leaves are ovate, hairy, and soft grayish-green. In late spring and early summer, bears masses of saucer-shaped, bright yellow flowers in terminal clusters. **H** 6in (15cm) or more, **S** 16–20in (40–50cm).

☼ 💧 Z6–9

Hippocrepis comosa
(Horseshoe vetch)
Vigorous perennial with prostrate, rooting stems bearing open spikes of pealike, yellow flowers in summer and leaves divided into leaflets. Self-seeds freely and may spread rapidly. **H** 2–3in (5–8cm), **S** indefinite.

☼ 💧 Z5–7

Persicaria vacciniifolia
Evergreen, perennial with woody, red stems. Leaves are tinged red in fall. Bears deep pink or rose-red flowers in late summer and fall. **H** 4–6in (10–15cm), **S** to 12in (30cm).

☼ 💧 Z8–11 ⓘ

Genista sagittalis
Deciduous, semiprostrate shrub with winged stems bearing a few ovate, dark green leaves. Pealike, yellow flowers are borne in dense, terminal clusters in early summer, followed by hairy seed pods.
H 3in (8cm), **S** 12in (30cm) or more.

☼ 💧 Z5–8

Nertera granadensis (Bead plant)
Prostrate perennial with dense mats of tiny, bright green leaves. In early summer, bears minute, greenish-white flowers, then many shiny, orange or red, occasionally white berries. Needs ample moisture in summer. **H** to ½in (1cm), **S** 4in (10cm).

◐ 💧 Z9–11

Gaultheria procumbens
Vigorous, evergreen subshrub with prostrate stems bearing clusters of ovate, leathery leaves that turn red in winter. In summer, solitary bell-shaped, pink-flushed, white flowers are produced in leaf axils, followed by scarlet berries.
H 2–6in (5–15cm), **S** indefinite.

◐ 💧 pH Z3–8 ⓘ

RED

Sedum lydium
Evergreen, mat-forming perennial with reddish stems and narrow, fleshy, often red-flushed leaves. Bears flat-topped, terminal clusters of tiny, white flowers in summer. **H** 2in (5cm), **S** to 6in (15cm).

☼ 💧Z5–8 ⓘ

Acaena microphylla
Compact, mat-forming perennial, usually evergreen, with leaves divided into tiny leaflets, bronze-tinged when young. Heads of small flowers with spiny, dull red bracts are borne in summer and develop into decorative burs. **H** 2in (5cm), **S** 6in (15cm).

☼ 💧Z6–8

GRAY

***Artemisia schmidtiana* 'Nana'**
Prostrate perennial with fernlike, silver foliage. Bears insignificant sprays of daisylike, yellow flowers in summer. Suitable for a wall or bank. **H** 3in (8cm), **S** 8in (20cm).

☼ 💧Z5–8

Jovibarba hirta
Evergreen, mat-forming perennial with rosettes of hairy, mid-green leaves, often suffused red, and terminal clusters of star-shaped, pale yellow flowers in summer. Dislikes winter wet. **H** 3–6in (8–15cm), **S** 4in (10cm).

☼ 💧Z5–8

Sedum obtusatum
Evergreen, prostrate perennial with small, fat, succulent leaves that turn bronze-red in summer. Loose, flat sprays of tiny, bright yellow flowers are borne in summer. Dislikes summer wet. **H** 2in (5cm), **S** 4–6in (10–15cm).

☼ 💧Z5–9 ⓘ

Sedum spathulifolium
Evergreen, mat-forming perennial with rosettes of fleshy, green or silver leaves, usually strongly suffused bronze-red, and small clusters of tiny, yellow flowers borne just above foliage in summer. Tolerates shade. **H** 2in (5cm), **S** indefinite.

☼ 💧Z5–9 ⓘ

Raoulia hookeri* var. *alboseericea
Evergreen, prostrate perennial with tiny rosettes of silver leaves. Flower heads are produced briefly in summer as fragrant, yellow fluff. Best in poor, gritty humus in an alpine house. Dislikes winter wet. **H** to ½in (1cm), **S** 10in (25cm).

☼ 💧Z8–9

Acaena caesiiglauca
Vigorous, groundcover perennial, usually evergreen. Has hairy, glaucous blue leaves divided into leaflets. Heads of small flowers with spiny, brownish-green bracts, borne in summer, develop into brownish-red burs. **H** 2in (5cm), **S** 30in (75cm) or more.

☼ 💧Z6–9

Paronychia kapela* subsp. *serpyllifolia
Evergreen, very compact, mat-forming perennial with minute, silver leaves. Inconspicuous flowers, borne in summer, are surrounded by papery, silver bracts. Good for covering tufa.
H to ½in (1cm), **S** 8in (20cm).

☼ ◊ Z6–10

Asarum europaeum (European wild ginger)
Vigorous, evergreen, prostrate, rhizomatous perennial with large, kidney-shaped, leathery, glossy leaves that hide tiny, brown flowers produced in spring. **H** 6in (15cm), **S** indefinite.

☀ ◊ Z4–8

***Arabis procurrens* 'Variegata'**
Evergreen, mat-forming perennial with small, ovate, green leaves, splashed with cream. Bears small, white flowers in spring and early summer. May revert to type, with plain green leaves.
H ¾in (2cm), **S** 12in (30cm).

☼ ◊ Z3–7

***Trifolium repens* 'Purpurascens'**
Vigorous, semievergreen, ground-cover perennial, grown for its divided, bronze-green foliage, variably edged bright green. Produces heads of small, pealike, white blooms in summer. Suits a wild bank. **H** in flower 3–5in (8–12cm), **S** 8–12in (20–30cm) or more.

☼ ◊ Z4–8

***Arctostaphylos uva-ursi* 'Point Reyes'**
Evergreen, prostrate shrub with long shoots and glossy leaves. In late spring and early summer, bears terminal clusters of urn-shaped, pale pink to white flowers, followed by red berries.
H 4in (10cm), **S** 20in (50cm).

☼ ◊ pH Z2–6

***Sedum spathulifolium* 'Cape Blanco'**
Evergreen perennial with rosettes of fleshy leaves, frequently suffused purple. Tiny, yellow flowers are borne above foliage in summer. Tolerates shade.
H 2in (5cm), **S** indefinite.

☼ ◊ Z5–9 ⓘ

Pachysandra terminalis
Evergreen, creeping perennial that has smooth leaves clustered at the ends of short stems. Bears spikes of tiny, white flowers, sometimes flushed purple, in early summer. Makes excellent groundcover in a moist or dry site.
H 4in (10cm), **S** 8in (20cm).

☀ ◊ Z4–8

Sempervivum ciliosum
Evergreen, mat-forming perennial with rosettes of hairy, gray-green leaves and, in summer, heads of small, star-shaped, yellow flowers. Dislikes winter wet; best grown in an alpine house. **H** 3–4in (8–10cm), **S** 4in (10cm).

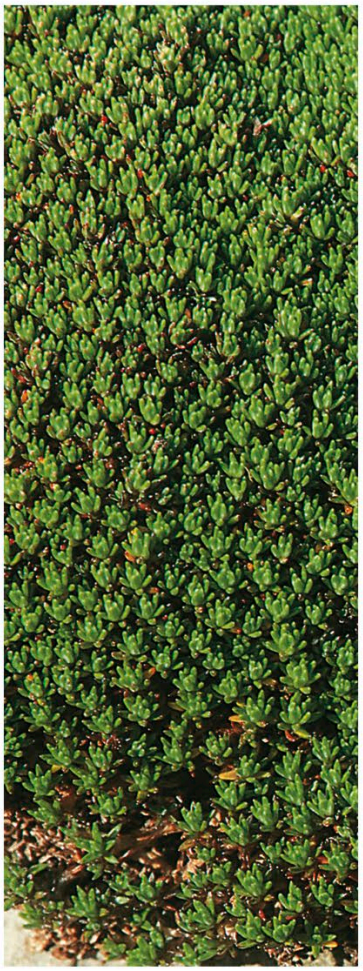
☼ ◊ Z7–11

Raoulia australis
Evergreen, carpeting perennial forming a hard mat of gray-green leaves. Bears tiny, fluffy, sulfur-yellow flower heads in summer. **H** to ½in (1cm), **S** 10in (25cm).

☼ 💧Z8–9

Azorella trifurcata
Evergreen perennial forming tight, hard cushions of tiny, leathery, ovate leaves in rosettes. Bears many small, stalkless umbels of yellow flowers in summer. **H** to 4in (10cm), **S** 6in (15cm).

☼ 💧Z6–7



Raoulia haastii
Evergreen perennial forming low, irregular hummocks of minute leaves that are apple-green in spring, dark green in fall, and chocolate-brown in winter. Occasionally bears small, fluffy, yellow flower heads in summer. **H** to ½in (1cm), **S** 10in (25cm).

☼ 💧Z7–8

***Sagina procumbens* 'Boydii'**
Evergreen perennial with hard cushions of minute, stiff, bottle-green leaves in small rosettes. Bears insignificant flowers in summer. Slow-growing. **H** ½in (1cm), **S** to 8in (20cm).

☼ 💧Z5–7

Arctostaphylos uva-ursi
Evergreen, low-growing shrub with arching, intertwining stems clothed in small, ovate, bright green leaves. Bears urn-shaped, pinkish-white flowers in summer followed by scarlet berries. **H** 4in (10cm), **S** 20in (50cm).

☼ 💧 pH Z2–6

Plantago nivalis
Evergreen perennial with neat rosettes of thick, silver-haired, green leaves. Bears spikes of insignificant, dull gray flowers in summer. Dislikes winter wet. **H** in leaf 1in (25cm), **S** 2in (5cm).

☼ 💧Z6–7

Bolax gummifer
Very slow-growing, evergreen perennial with neat rosettes of small, blue-green leaves forming extremely hard cushions. Insignificant, yellow flowers are rarely produced. Grows well on tufa. **H** 1in (25cm), **S** 4in (10cm).

☼ 💧Z5–6

YELLOW

***Phedimus kamtschaticum* 'Variegata'**
Semievergreen, prostrate perennial with fleshy, cream-edged leaves. Has fleshy stems and leaf buds in winter and loose, terminal clusters of orange-flushed, yellow flowers in early fall.
H 2–3in (5–8cm), **S** 8in (20cm).

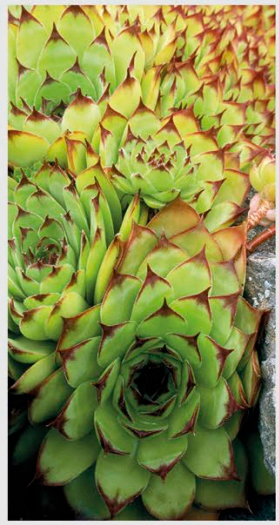
☼ ◊ Z3–8 ⓘ

***Saxifraga exarata* subsp. *moschata* 'Cloth of Gold'**
Evergreen hummock-forming perennial with small, soft rosettes of bright golden foliage; produces best color in shade. Bears star-shaped, white flowers on slender stems in summer.
H 4–6in (10–15cm), **S** 6in (15cm).

☼ ◊ Z5–7

HOUSELEEKS

The main attraction of houseleeks (*Sempervivum*) is their colorful rosettes of leaves. These range from bright yellow through various shades of green, gray, pink, purple, red, and orange to almost black. The leaves may be dull or glossy, or covered with soft down or longer hairs. Leaf shape can also vary from short and succulent to long and tapering. The rosettes are most striking in the spring and summer, but even in the winter, many varieties remain attractively colored. It is the endless range of different leaf shapes, shades, and textures that make this group so interesting to enthusiasts. Houseleeks do not like damp or shaded conditions, but thrive in well-drained soil in full sun. They are ideal for pots or sink gardens on a south-facing patio, or can be planted out in rockeries or in the crevices of stone walls.

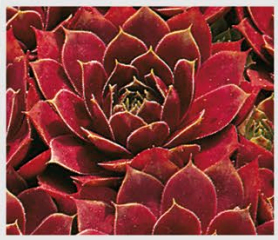


S. calcareum

***S.* 'Blood Tip'**

***S.* 'Rosie'**

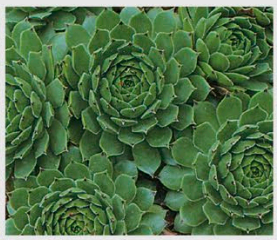
***S. calcareum* 'Extra'**



S. tectorum

S. arachnoideum

S. giuseppii

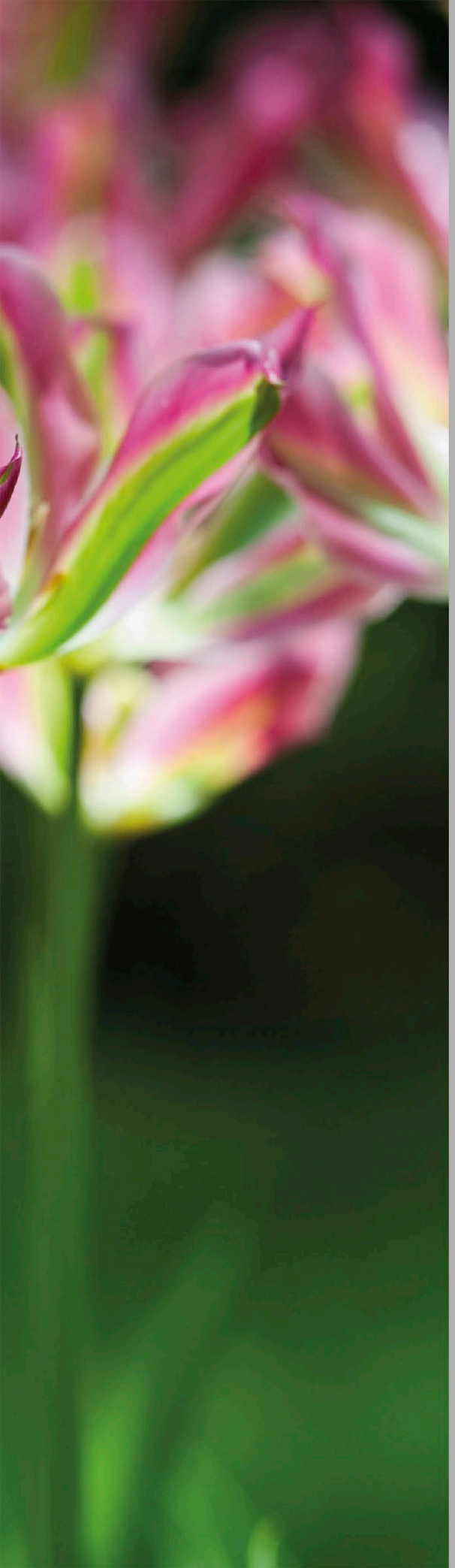


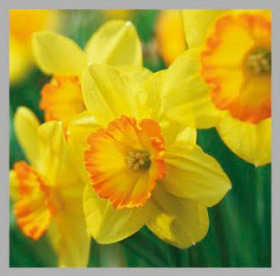
S. montanum

***S.* 'Gulle Dame'**

***S.* 'Kappa'**

***S.* 'Gallivarda'**





BULBS

Bulbous plants are found throughout the world in habitats as diverse as woodland and scrub, meadows, river banks, the edges of streams, and rocky hills and mountains. There are bulbs to suit every garden site and design—from the tiny *Iris danfordiae* for a rock garden, to daffodils and tulips in beds and borders, and carpeting erythroniums or the statuesque *Cardiocrinum giganteum* for a woodland garden. Most have a distinct flowering season, yet with careful planning it is possible to extend or enhance this period of interest. The majority bloom in spring or early summer, producing splashes of color before many shrubs and perennials reach their peak; others (such as snowdrops) provide a late winter display, while colchicums, cyclamen, and some crocuses will brighten a fall day.

BULBS

Embracing a wide range of decorative plants, bulbs provide exciting effects throughout the year, with large drifts of snowdrops in late winter, daffodils and tulips in spring, the exquisite perfume of lilies and vibrant dahlia colors in summer, and the spidery flowers of nerines in fall.

SIZE CATEGORIES USED WITHIN THIS GROUP		
Large over 30in (75cm)	**Medium** 9–30in (23–75cm)	**Small** up to 9in (23cm)

BULB DEFINITIONS

Bulbs are divided into smaller plant categories, including true bulbs, corms, and tubers. All of these swollen, underground, food-storage organs help the bulb to survive periods of drought.

Bulb
A true bulb is a storage organ made up of stems and fleshy leaves inside. Examples include daffodils, tulips, and eucomis (above).

Corm
Swollen stems that have adapted to store food are known as corms. They appear solid throughout, and include crocuses (above).

Tuber
Tuberous plants have swollen underground roots or stems. Examples include cyclamen, dahlias, (above), and begonias.

What are bulbs?

The term bulb can be used to describe all swollen, underground, food-storage organs, and includes true bulbs as well as corms, rhizomes, and tubers. True bulbs have fleshy scales—modified leaves or leaf bases—that overlap and are often enclosed in a papery tunic, as in narcissi, or they may be naked and loosely arranged like lily bulbs.

Corms are compressed and enlarged stem bases, usually enclosed in a fibrous or papery tunic, as in the crocus. Each corm lasts 1 year, and is replaced by a new one after flowering. Tubers, such as cyclamen, are solid, underground sections of modified stems or roots and seldom possess scales or tunics. Rhizomes are modified stems that creep at or just below soil level, and may be thin and wiry or swollen and fleshy.

A few bulbs are evergreen, but most grow and bloom during a short season, then die back to below ground level. Their leaves produce the food store for the following year, which is why the foliage must not be cut down after flowering, but allowed to wither naturally.

When below ground, bulbs are described as dormant but they are, in fact, ripening and developing the following year's flowers, and must be planted in a suitable site to thrive. Bulbs that originate from dry, hot climates, such as nerines and watsonias, need warm, dry conditions when dormant to aid ripening and flower formation, while those from woodland or other damp, shaded habitats, such as bluebells (*Hyacinthoides*) and snowdrops (*Galanthus*) require a cool, slightly moist spot.

Designing with bulbs

There are bulbs to suit all garden designs and planting styles. They range in size from the tiny *Iris danfordiae* and fall daffodil (*Sternbergia lutea*), both suitable for a scree or rock garden, to carpeting erythroniums for the dappled shade of a woodland garden, midrange alliums and tulips for a hot, sunny border, and tall, slender, regal lilies that produce highly scented flowers on stems up to 6ft (1.8m) in height. The

BELOW Carpets of spring color
A selection of daffodils has been naturalized in the grass beneath silver birches and spring-flowering trees, creating a sea of nodding yellow flowers.

flower forms also lend themselves to certain garden styles. Tulips with sculptural cupped flowers planted *en masse* and the sharp flower shapes of many dahlias are ideal for formal schemes, while the looser flower forms of nectaroscordums and turkscap lilies, and arching spikes of crocosmias, create an informal look. Turf spangled with crocuses or snake's-head fritillaries (*Fritillaria meleagris*) mimics their wild habitat and provides early color in naturalistic schemes.

Bulbs add seasonal color and interest to mixed borders with annuals, shrubs, and perennials. Daffodils (*Narcissus*), crown imperials (*Fritillaria imperialis*), alliums, and dahlias all blend well with other types of planting. Unscented lilies make good partners for scented roses, while exotic-looking cannas and alstroemerias add spice to a tropical design. If you can't squeeze bulbs into your border, many are perfectly at home in containers and baskets.

Year-round interest

Choose carefully, and you can have a bulb in flower for most of the year. The first to appear in late winter are the snowdrops (*Galanthus*) and winter aconites (*Eranthis*), while early narcissus, muscari, crocuses, scillas, chionodoxas, dwarf iris, and *Anemone blanda* mark the onset of spring.

In mid-spring, fill your garden with vibrant yellow daffodils and bright tulips, or opt for the same plants in pastel shades—the choice is vast for both genera. Summer-flowering bulbs, such as *Galtonia candicans*, most alliums, the Peruvian daffodil (*Hymenocallis naricissiflora*), and ornithogalums offer colorful highlights.

These are followed in late summer by gladioli, crinums, dahlias, and crocosmias, which may continue to bloom into the fall until the frosts arrive. When the summer spectacle is over, select fall-flowering nerines, crocuses, colchicums, and cyclamen, and to end the year's display, use *Cyclamen hederifolium*, whose marbled foliage often persists into winter.

For scented bulbs, choose hyacinths, bluebells, and scented daffodils for spring, and lilies and crinums for summer displays.

LAYERING BULBS IN CONTAINERS

Pots brimming with spring bulbs lift the spirits after a long winter, but you need to plan ahead to create the most spectacular displays. In fall, look out for bulbs at garden centers or in mail-order catalogs, and check flowering times for a synchronized display of tulips, daffodils, and grape hyacinths (*Muscari*).

A multicolored display

1 Plant in layers
In fall, place crocks at the bottom of a large pot and add a 2in (5cm) layer of gravel. Then add a layer of good quality compost. Place the largest bulbs, for example daffodils, on the surface and cover with more compost so that the tips are just visible.

2 Cover the bulbs
Now place the next layer of bulbs, such as tulips, between the daffodil bulbs, and cover with more potting compost. Finally, add small bulbs, like grape hyacinths, on this top layer, and cover with compost. Press down lightly with your hands, and leave the pot in a sheltered, sunny spot.

NATURALIZING BULBS

You can create spectacular effects by naturalizing bulbs in a lawn or under trees. Choose robust plants, such as snowdrops, daffodils, and crocuses, which are able to compete with trees roots and grass. To achieve a natural, random effect, toss the bulbs in the air and plant them individually where they fall. For each bulb, dig out a small plug of soil and turf, two to three times the depth of the bulb. After flowering, when the leaves have died, mow the grass.

BULB PLANTING PLANNER

Type of bulb	Planting time	Planting depth	Preferred conditions
Agapanthus	spring	4in (10cm)	Full sun in moist, but well drained soil
Allium	fall	2–6in (5–15cm)	Full sun in moist, but well drained soil
Colchicum	late summer	4in (10cm)	Full sun in well-drained soil
Crocus (spring) Crocus (fall)	fall late summer	3in (8cm) 3in (8cm)	Full sun in well-drained soil Full sun in well-drained soil
Cyclamen	fall	4in (10cm)	Partial shade in well-drained soil
Galanthus	early fall	1–2in (2.5–5cm)	Full sun or partial shade in moist soil that does not dry out in summer
Hyacinthus	fall	4in (10cm)	Full sun or partial shade in moist, well-drained soil
Lilium	fall	4–6in (10–15cm)	Full sun or partial shade; most prefer acid to neutral, well-drained soil
Muscari	fall	2in (5cm)	Full sun in well-drained soil
Narcissus	fall	4–6in (10–15cm)	Sun or partial shade in any reasonable, well-drained garden soil
Tulipa	late fall	3–6in (8–15cm)	Full sun in well-drained soil

WHITE

Ornithogalum magnum
Late spring-flowering bulb with linear, gray-green basal leaves. Produces upright, pyramid-shaped racemes of small, star-shaped, white flowers, with a green stripe on the reverse. **H** 24–32in (60–80cm), **S** 4in (10cm).

☼ ◊Z5–9 ⓘ

Fritillaria verticillata
Spring-flowering bulb with slender leaves in whorls up the stem, which bears a loose spike of 1–15 bell-shaped, white flowers, ¾–1½in (2–4cm) long and checkered green or brown. **H** to 3ft (1m), **S** 3–4in (8–10cm).

◑ ◊Z6–8

***Fritillaria persica* 'Ivory Bells'**
Robust, late spring-flowering bulb with lance-shaped, gray-green leaves on sturdy, upright stems. Produces a terminal raceme of 10–30 pendent, bell-shaped, creamy-white to green-white flowers. **H** 30–39in (75–100cm), **S** 4in (10cm).

☼ ◊Z6–8

PURPLE

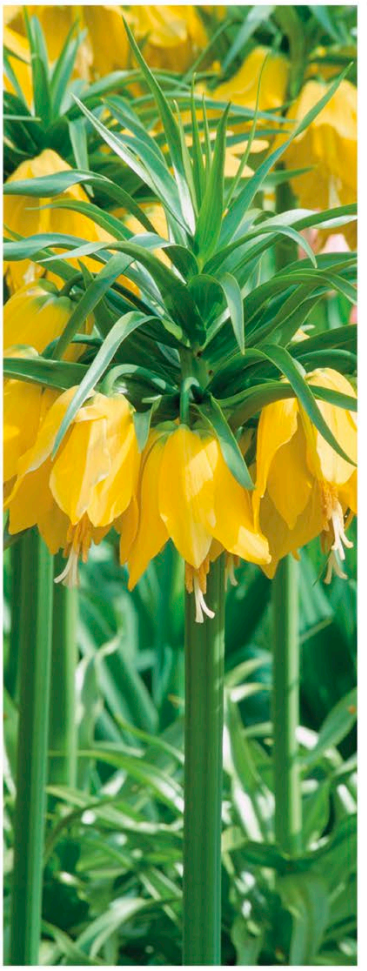
Fritillaria persica
Spring-flowering bulb with narrow, lance-shaped, gray-green leaves along stem. Produces a spike of 10–20 or more narrow, bell-shaped, black- or brownish-purple flowers, ⅝–¾in (1.5–2cm) long. **H** 5ft (1.5m), **S** 4in (10cm).

☼ ◊Z6–8

Allium aflatunense
Late spring-flowering bulb with strap-shaped, mid-green, basal leaves. Dense, spherical, terminal umbels of small, star-shaped, lilac-purple flowers are borne on sturdy stems. Seedheads may be dried for decorative use. **H** 32in (80cm), **S** 4–6in (10–15cm).

☼ ◊Z4–8

YELLOW



***Fritillaria imperialis* 'Lutea'**
Spring-flowering bulb with whorls of lance-shaped, shiny, light green leaves and a head of up to 8 pendent, bell-shaped, bright yellow flowers, to 2in (6cm) long, crowned by a tuft of small, leaflike bracts. **H** 3ft (1m), **S** 10in (25cm).

☼ ◊Z5–9

Fritillaria raddeana
Robust, spring-flowering bulb with lance-shaped leaves in whorls on lower half of stem. Has a head of up to 20 widely conical, pale or greenish-yellow flowers, 1¼–1½in (3–4cm) long, topped by a "crown" of small leaves. **H** to 3ft (1m), **S** 6–9in (15–23cm).

☼ ◊Z6–9

ORANGE

Fritillaria imperialis (Crown imperial)
Spring-flowering bulb with glossy, pale green leaves carried in whorls on leafy stems. Bears up to 5 widely bell-shaped, orange flowers crowned by small, leaflike bracts. **H** to 5ft (1.5cm), **S** 9–12in (23–30cm).

☼ 💧Z5–9

Fritillaria recurva (Scarlet fritillary)
Spring-flowering bulb with whorls of narrow, lance-shaped, gray-green leaves. Bears a spike of up to 10 narrow, yellow-checkered, orange–red flowers. **H** to 30in (1m), **S** 3–4in (8–10cm).

☼ 💧Z6–9

WHITE

***Crinum* x *powellii* 'Album'**
Late summer- or fall-flowering bulb, with a long neck, producing a group of semierect, strap-shaped leaves. Leafless flower stems bear heads of fragrant, widely funnel-shaped, white flowers. **H** to 3ft (1m), **S** 2ft (60cm).

☼ 💧Z7–10 ⓘ

Camassia leichtlinii* subsp. *leichtlinii
Tuft-forming bulb with long, narrow, erect, basal leaves. Each leafless stem bears a dense spike of 6-petaled, star-shaped, bluish-violet or white flowers, 1½–3in (4–8cm) across, in summer. **H** 3–5ft (1–1.5m), **S** 8–12in (20–30cm).

☼ 💧Z4–11

Crinum moorei
Summer-flowering bulb with a long neck, up to 3ft (1m) tall, and strap-shaped, semierect, gray-green leaves. Leafless flower stems bear heads of long-tubed, funnel-shaped, white to deep pink flowers. **H** 20–28in (50–70cm), **S** 2ft (60cm).

☼ 💧Z7–9 ⓘ

Gladiolus murielae
Midsummer-flowering corm with a loose spike of up to 10 sweetly scented, hooded, funnel-shaped, maroon-eyed, pure white flowers. Has linear, pleated leaves. Good for cutting. **H** 32in (80cm), **S** 2in (5cm).

☼ 💧Z8–10

Galtonia candicans
(Summer hyacinth)
Late summer- or fall-flowering bulb with wide strap-shaped, fleshy, semierect, basal, gray-green leaves. Leafless stem bears a spike of up to 30 pendent, short-tubed, white flowers. **H** 3–4ft (1–1.2m), **S** 7–9in (18–23cm).

☼ 💧Z7–10

GLADIOLI

Comprising about 180 species, with more than 10,000 hybrids and cultivars for garden cultivation, exhibiting, and cutting, gladioli are prized for their showy spikes of usually open, funnel-shaped flowers. *Gladiolus* hybrids are divided into the Grandiflorus Group, with long, densely packed flower spikes, categorized as miniature, small, medium-sized, large, or giant, according to the width of the lowest flowers, and the Primulinus and Nanus Groups, which have loose spikes of small flowers. Plant gladioli in borders or pots for late spring to early fall displays, and store corms in a frost-free place over winter. In cold areas, grow them by a sheltered, sunny wall; winter-flowering South African gladioli require a cool greenhouse. For more information see the Plant Dictionary.

***G.* 'Purple Flora'**
[Grandiflorus Group]

***G.* 'Her Majesty'**
[Grandiflorus Group]

***G.* 'Blue Frost'**
[Grandiflorus Group]

***G.* 'White Prosperity'**
[Grandiflorus Group]

***G.* 'Columbine'**
[Primulinus Group]

***G.* 'Velvet Eyes'**
[Grandiflorus Group]

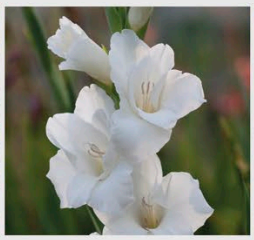
***G.* 'Nova Lux'**
[Grandiflorus Group]

***G.* 'Impressive'** [Nanus Group]

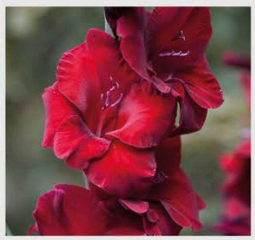
***G.* 'Morning Gold'**
[Grandiflorus Group]

***G.* 'Peter Pears'**
[Grandiflorus Group]

***G.* 'The Bride'**
[Nanus Group]



***G.* 'Sancerre'**
[Grandiflorus Group]



***G.* 'Zorro'**
[Grandiflorus Group]

***G.* 'Wine and Roses'**
[Grandiflorus Group]

***G.* 'Nymph'** [Nanus Group]

***G.* 'Oscar'** [Grandiflorus Group]

***G.* 'Stella'** [Grandiflorus Group]

***G.* 'Drama'** [Grandiflorus Group]

WHITE

***Allium* 'Mount Everest'**
Late spring to early summer-flowering bulb with sturdy stems bearing spherical umbels, 5–6in (12–15cm) across, of tiny star-shaped, white flowers, with green stamens. Basal strap-shaped, semierect, leaves are grayish-green. **H** 3½ft (1.1m), **S** 6in (15cm).

☼ ◊ Z4–9

Cardiocrinum giganteum (Giant lily)
Stout, leafy-stemmed bulb. In summer, bears long spikes of fragrant, slightly pendent, cream flowers, 6in (15cm) long, with purple-red streaks inside, then brown seed pods. **H** to 10ft (3m), **S** 2½–3½ft (75cm–1.1m).

☼ ◑ Z7–9

Nectaroscordum siculum* subsp. *bulgaricum
Late spring- to early summer-flowering bulb with pendent, bell-shaped, white flowers, flushed purple-red and green. In seed, stalks bend upward, holding dry seed pods erect. **H** to 4ft (1.2m), **S** 1–1½ft (30–45cm).

☼ ◑ Z6–10

Polianthes tuberosa (Tuberose)
Late summer-flowering, tuberous perennial. Sweetly scented, flared, funnel-shaped, white flowers are borne above long, strap-shaped, upright, basal leaves. Keep tuber dry when dormant. **H** 4ft (1.2m), **S** 6in (15cm).

☼ ◊ Z8–11

Nomocharis pardanthina
Summer-flowering bulb with stems bearing whorls of lance-shaped leaves and up to 15 outward-facing, white or pale pink flowers, each with purple blotches and a dark purple eye. **H** to 3ft (1m), **S** 5–6in (12–15cm).

☼ ◑ Z7–9

PINK

Crinum* x *powellii
Late summer- or fall-flowering bulb with a long neck producing a group of strap-shaped, semierect leaves. Leafless flower stems bear heads of fragrant, widely funnel-shaped, pink flowers. **H** to 3ft (1m), **S** 2ft (60cm).

☼ ◊ Z7–10 ⓘ

Watsonia meriana
Clump-forming, summer-flowering corm with sword-shaped, erect leaves at base, with smaller, sheathlike leaves on the stem. Produces a loose spike of trumpet-shaped flowers, 2–2½in (5–6cm) long, in bright pink to vivid orange or red. **H** 4ft (1.2m), **S** 6in (15cm).

☼ ◊ Z9–10

PINK

Dierama pulcherrimum
Upright, summer-flowering corm with long, narrow, straplike, evergreen leaves, above which rise elegant, arching, wiry stems bearing funnel-shaped, deep pink flowers. Prefers deep, rich soil.
H 5ft (1.5m), **S** 1ft (30cm).

☼ ◑ Z8–10

Notholirion campanulatum
Early summer-flowering bulb with long, narrow leaves in a basal tuft. Leafy stem bears a spike of 10–40 pendent, funnel-shaped flowers, each 1½–2in (4–5cm) long, with green-tipped, deep rose-purple petals. **H** to 3ft (1m), **S** 3–4in (8–10cm).

☼ ◑ Z7–10

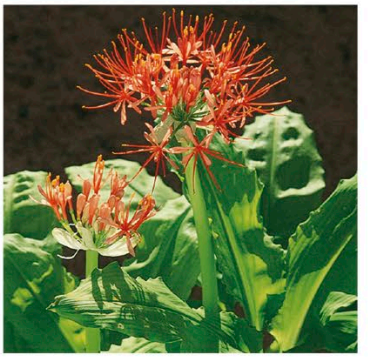
Watsonia borbonica
Very robust, summer-flowering corm with narrowly sword-shaped leaves both at base and on stem. Produces a loose, branched spike of rich pink flowers, with 6 spreading, pointed, rose-red lobes. **H** 3–5ft (1–1.5m), **S** 1½–2ft (45–60cm).

☼ Z11–13

RED

Watsonia pillansii
Summer-flowering corm with long, sword-shaped, erect leaves, some basal and some on stem. Stem bears a dense, branched spike of tubular, orange-red flowers, each 2½–3in (6–8cm) long, with 6 short lobes. **H** to 3ft (1m), **S** 1–1½ft (30–45cm).

☼ Z11–13



Scadoxus multiflorus* subsp. *katherinae (Blood flower)
Very robust, clump-forming bulb with lance-shaped, wavy-edged leaves. Bears an umbel of up to 200 red flowers in summer. **H** to 4ft (1.2m), **S** 1–1½ft (30–45cm). Min. 50°F (10°C).

☼ ◑ Z14–15

Dracunculus vulgaris (Dragon's arum)
Spring- and summer-flowering tuber with deeply divided leaves at the apex of a thick, blotched stem. A blackish-maroon spadix protrudes from a deep maroon spathe, 14in (35cm) long.
H to 3ft (1m), **S** 1½–2ft (45–60cm).

☼ Z8–10 ⓘ

***Gloriosa superba* 'Rothschildiana'** (Glory lily)
Deciduous, summer-flowering, tuberous, tendril climber. Upper leaf axils each bear a large flower that has 6 reflexed, red petals with scalloped, yellow edges.
H to 6ft (2m), **S** 1–1½ft (30–45cm).
Min. 46°F (8°C).

☼ Z8–10 ⓘ

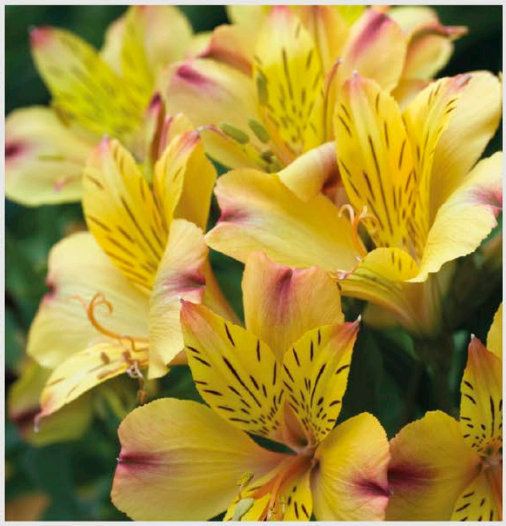
***Dahlia* 'Hillcrest Royal'**
Medium-flowered cactus dahlia producing rich purple flowers, with incurving petals, borne on strong stems in summer–fall.
H 3½ft (1.1m), **S** 2ft (60cm).

☼ Z9–11

ALSTROEMERIAS

Commonly known as the Peruvian lily, lily of the Incas, or parrot lily, these South American tuberous perennials are prized for their delicate, funnel-shaped blooms in yellow, orange, pink, red, white, or purple, with decorative markings in contrasting colors. They also have an exceptionally long flowering season—from midsummer to the first frosts—and make excellent cut flowers. Most suppliers offer plants, rather than tubers, which are best planted in spring after the late frosts in a sunny site and free-draining soil, giving the roots time to establish before winter. Although reasonably hardy, young plants are vulnerable to cold, wet conditions—protect them in winter with a thick mulch of well-rotted compost or manure.

A. PRINCESS JULIETA **('Zapriju!')** ⓘ



A. PRINCESS ARIANE **('Zapriari')** ⓘ

A. **'Apollo'** ⓘ

A. **'Blushing Bride'** ⓘ

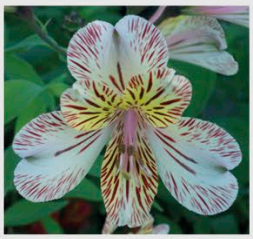
A. **'Friendship'** ⓘ

A. aurea **'Orange King'** ⓘ

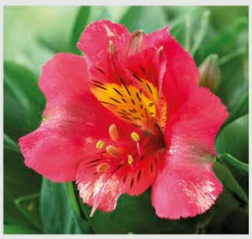
A. INCA ICE **('Koice')** ⓘ

A. **'Moulin Rouge'** ⓘ

A. **'Red Beauty'** ⓘ



A. **'Elvira'** ⓘ



A. **'Tara'** ⓘ

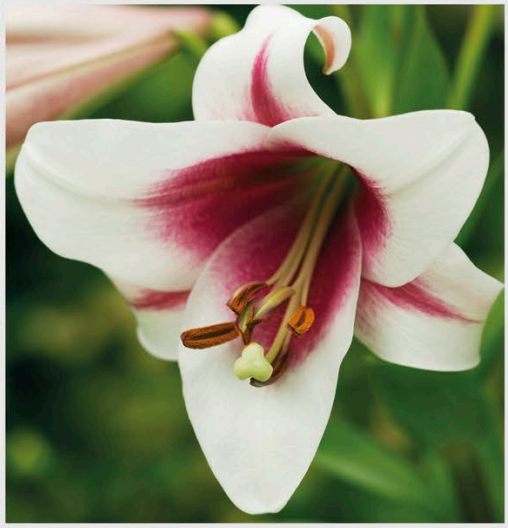
A. INCA TROPIC **('Kotrop')** ⓘ

LILIES

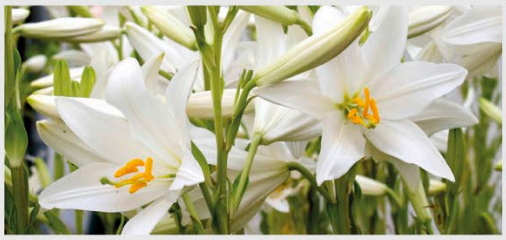
Lilies (*Lilium* species and cultivars) make elegant additions to summer borders and containers. Their flamboyant flowers range from nodding, upright, and trumpet-shaped forms to turkscaps with recurved petals. The blooms are often spotted with a darker or contrasting color, or have conspicuous stamens. Many lilies have a powerful, sweet fragrance, most notably the Oriental and Longiflorum hybrids, although a few species are unpleasantly scented. The hybrids thrive in sun and well-drained soil, and are available in a dazzling array of colors, from white, pink, and red to shades of yellow and orange. Lily species prefer partially shaded sites; some also require acidic soil. Leave plants undisturbed once established, as the bulbs are easily damaged. For more information see the Plant Dictionary.

L. 'Casa Blanca'

L. martagon var. *album*



L. TRIUMPHATOR ('Zanlophator')

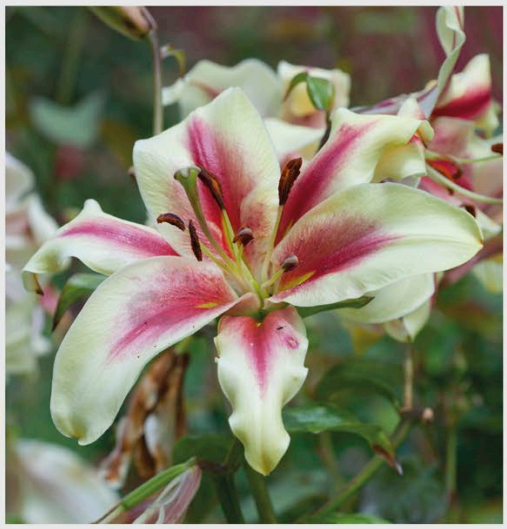


L. 'White Heaven'

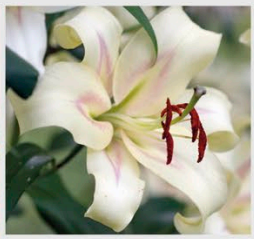
L. 'Sterling Star'

L. 'Mona Lisa'

L. auratum var. *platyphyllum*

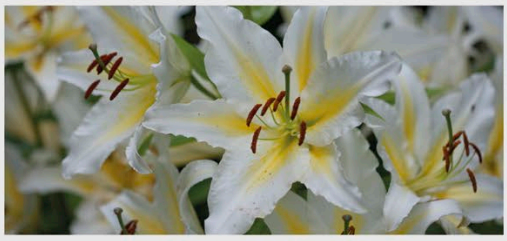


L. 'Nymph'

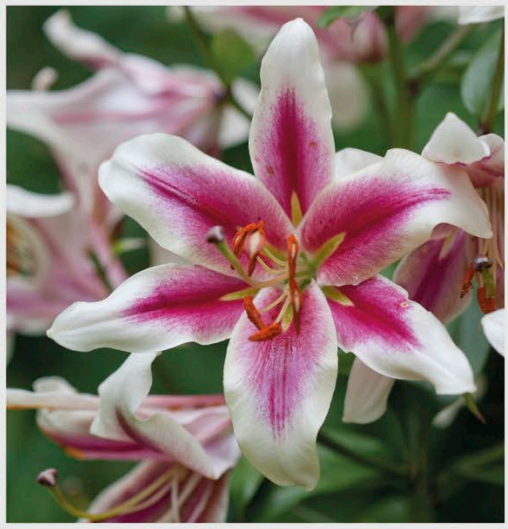


L. 'Bonbini'

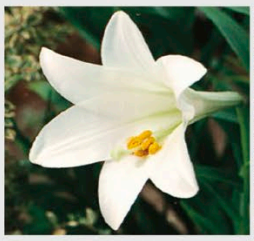
L. 'Black Magic'



L. 'Venezuela'

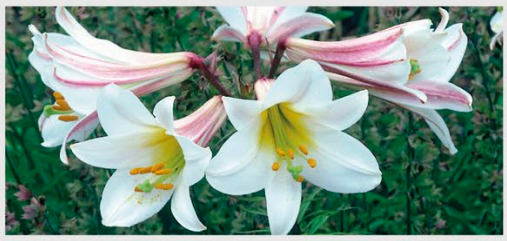


L. 'Altari'



L. longiflorum

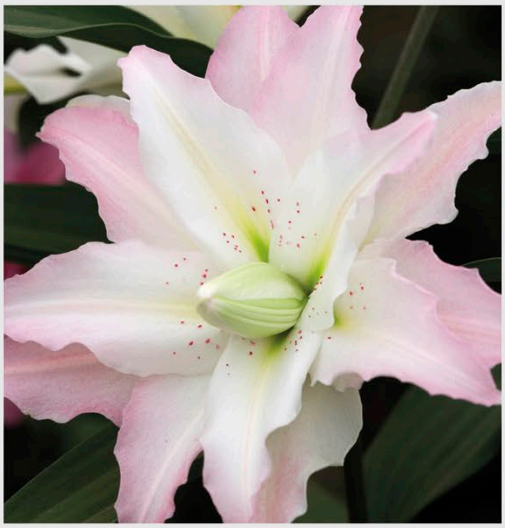
L. 'Arena'



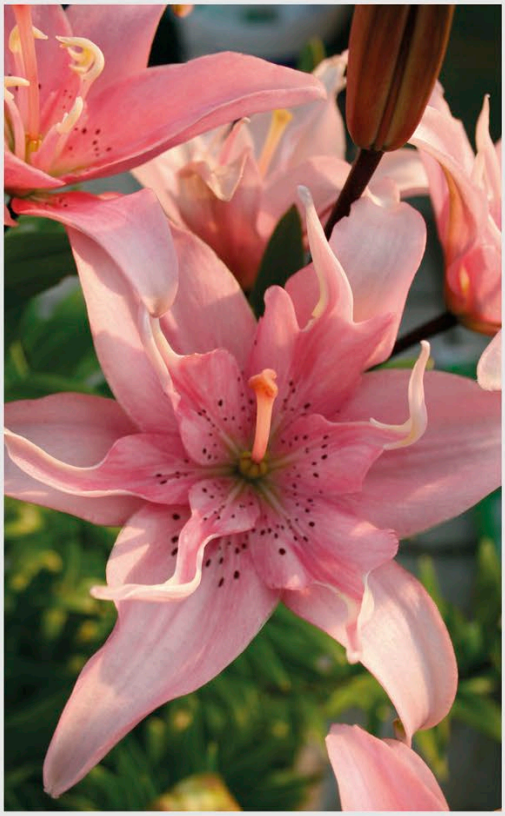
L. regale

L. 'Tom Pouce'

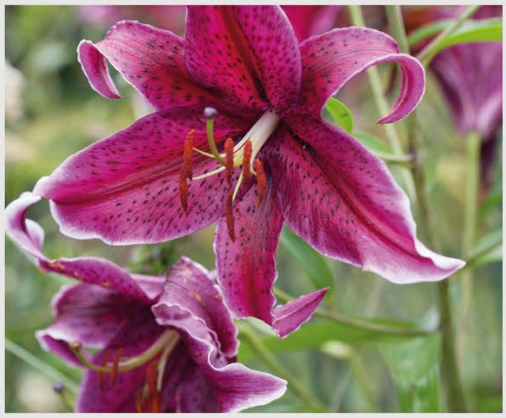
L. 'Côte d'Azur'



L. 'Miss Lucy'



L. 'Elodie'



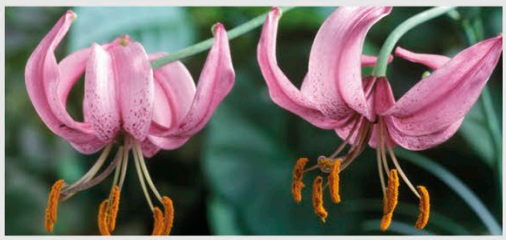
L. 'Sumatra'

L. 'Starfighter'

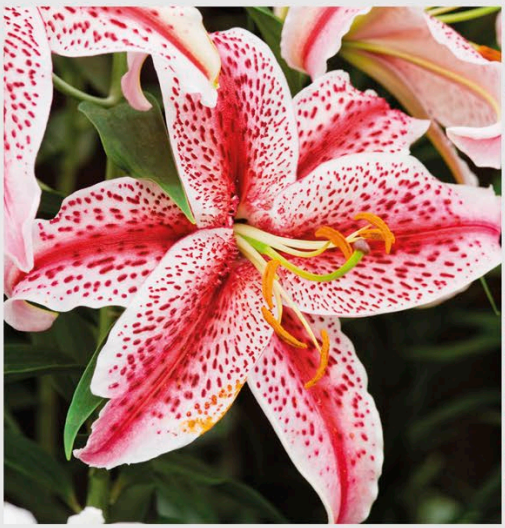
L. rubellum

L. mackliniae

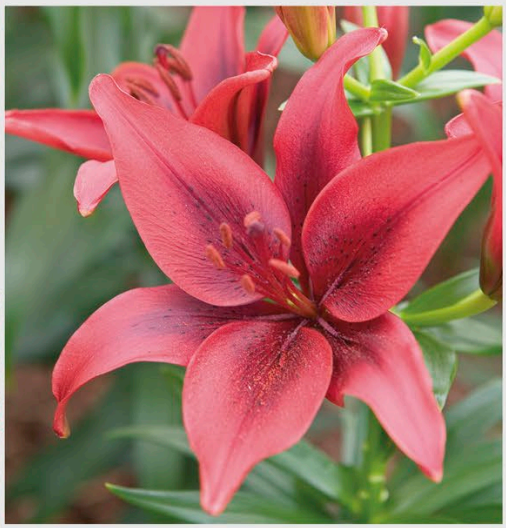
L. 'Sweet Lord'



L. cernuum

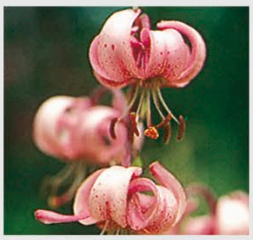


L. 'Tigerwoods'



L. 'Black Out'

L. 'Journey's End'

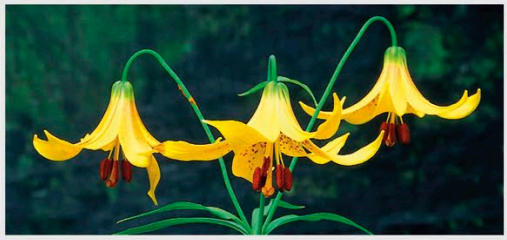


L. martagon

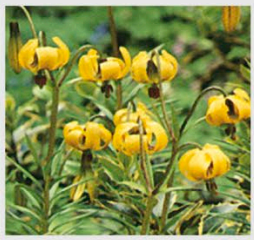
L. lankongense

L. 'Netty's Pride'

L. 'Conca d'Or'



L. canadense



L. pyrenaicum

L. 'Bright Star'

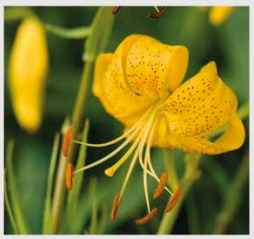
L. leichtlinii

L. 'Roma'

L. superbum

L. 'Connecticut King'

L. rosthornii



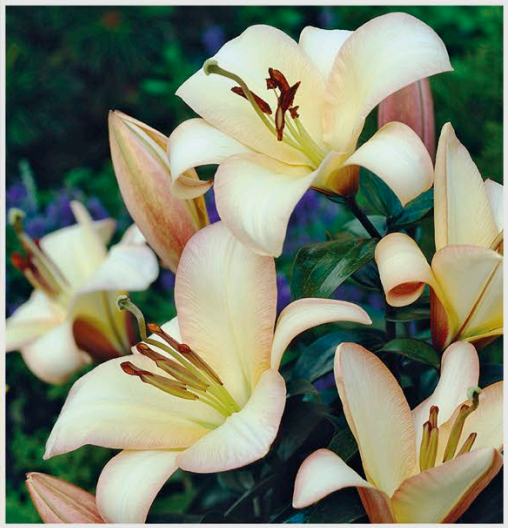
L. Citronella Group

L. medeoloides

L. monadelphum

L. pardalinum subsp. *wigginsii*

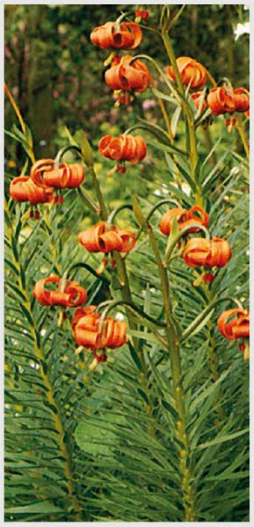
L. regale 'Royal Gold'



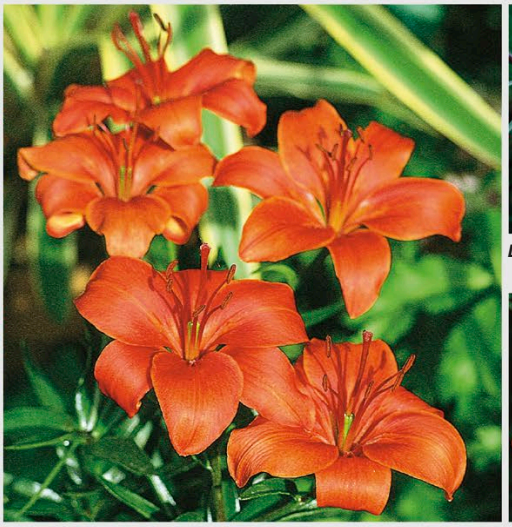
L. 'Boogie Woogie'

L. 'Blizzard'

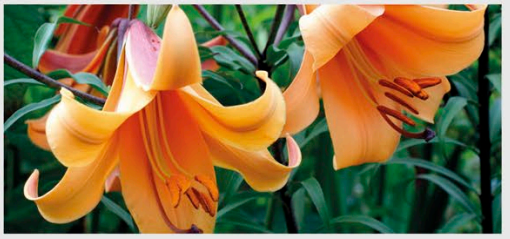
L. hansonii



L. pyrenaicum subsp. *pyrenaicum* f. *rubrum*



L. 'Crimson Pixie'



L. 'African Queen'

L. bulbiferum var. *croceum*

L. henryi

L. 'Orange Pixie'

L. 'Grand Cru'

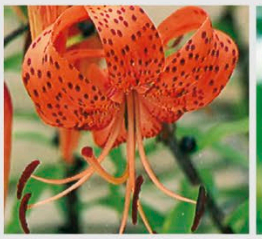
L. 'Red Carpet'

L. tsingtauense

L. 'Lady Bowes Lyon'

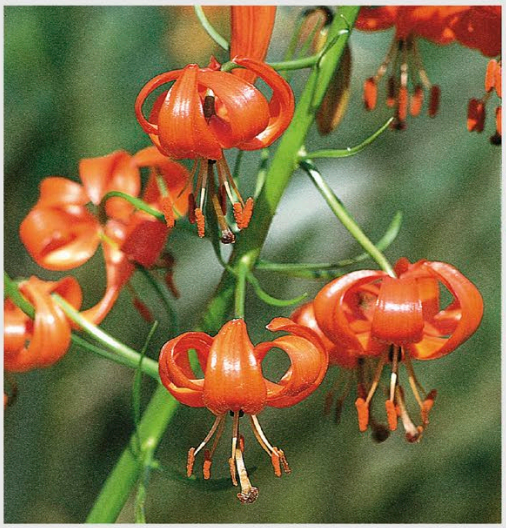
L. 'Enchantment'

L. 'Orange Electric'



L. lancifolium 'Splendens'

L. chalcedonicum



L. pomponium

L. 'Karen North'

L. pardalinum

L. 'Gran Paradiso'

Dierama pendulum
(Angel's fishing rod)
Clump-forming, late summer-flowering corm with arching, basal leaves. Bears pendulous, loose racemes of bell-shaped, pinkish-purple flowers, 1in (2.5cm) long. **H** to 5ft (1.5m), **S** 6–8in (15–20cm).

☼ ◑ Z7–9

Allium giganteum
Robust, summer-flowering bulb with long, wide, semierect, basal leaves. Produces a stout stem with a dense, spherical umbel, 5in (12cm) across, of 50 or more star-shaped, purple flowers. **H** to 6ft (2m), **S** 12–14in (30–35cm).

☼ ◊ Z6–10 ⓘ

***Allium* 'Globemaster'**
Summer-flowering bulb with dense spherical umbels, 6–8in (15–20cm) across, of small, star-shaped, deep violet flowers. Produces strap-shaped, semierect, glossy, gray-green, basal leaves. **H** 32in (80cm), **S** 8in (20cm).

☼ ◊ Z6–10

Allium atropurpureum
Summer-flowering bulb with compact, domed umbels, 3in (8cm) across, of small, star-shaped, deep red-purple flowers borne from early to midsummer. Basal leaves are strap-shaped, semierect, and gray-green. **H** 32in (80cm), **S** 4in (10cm).

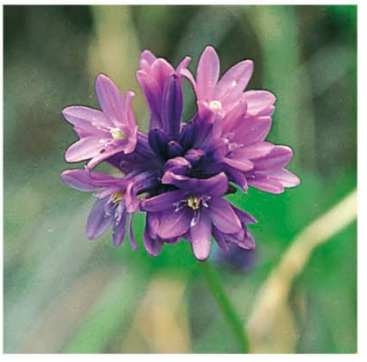
☼ ◊ Z4–7

***Allium* 'Purple Sensation'**
Early summer-flowering bulb with long, strap-shaped, semierect, gray-green, basal leaves. Produces spherical umbels of 50 or more star-shaped, rich purple flowers on sturdy stems in early summer. Good for cut flowers. **H** 32in (80cm), **S** 3in (7cm).

☼ ◊ Z4–9

***Allium* 'Gladiator'**
Summer-flowering bulb with long, strap-shaped, semierect, gray-green, basal leaves. Produces large, densely packed, spherical umbels of star-shaped, lilac-purple flowers on sturdy stems in summer. **H** 4ft (1.2m), **S** 8in (20cm).

☼ ◊ Z5–9



Dichelostemma congestum
Early summer-flowering bulb with semierect, basal leaves dying away when a dense head of funnel-shaped, purple flowers, each ⅝–¾in (1.5–2cm) long, is produced. **H** to 3ft (1m), **S** 3–4in (8–10cm).

☼ ◊ Z6–10

BLUE

Aristea capitata
Robust, evergreen, clump-forming rhizome with sword-shaped, erect leaves, to (2.5cm) across, and dense spikes of purple-blue flowers on short stalks in summer. **H** to 3ft (1m), **S** 1½–2ft (45–60cm).

☼ ◊ Z9–11

Neomarica caerulea
Summer-flowering rhizome with sword-shaped, semierect leaves in basal fans. Stems each bear a leaflike bract and a succession of irislike, blue flowers, with white, yellow, and brown central marks. **H** to 3ft (1m), **S** 3–5ft (1–1.5m). Min. 50ºF (10ºC).

◐ ◊ Z10–11

GREEN

Arisaema consanguineum
Summer-flowering tuber with robust, spotted stems and erect, umbrellalike leaves with narrow leaflets. Produces purplish-white- or white-striped, green spathes, 6–8in (15–20cm) long, and bright red berries. **H** to 3ft (1m), **S** 1–1½ft (30–45cm).

◐ ◊ Z5–9 ⓘ

Galtonia viridiflora
Clump-forming, summer-flowering bulb with widely strap-shaped, fleshy, semierect, basal, gray-green leaves. Leafless stem bears a spike of up to 30 pendent, short-tubed, funnel-shaped, pale green flowers. **H** 3–4ft (1–1.2m), **S** 7–9in (18–23cm).

☼ ◊ Z8–10

YELLOW

***Lilium* Golden Splendor Group**
Vigorous, variable Division 6a lilies. In midsummer, strong, sturdy stems produce umbels of large, scented, shallowly trumpet-shaped, almost bowl-shaped flowers in shades of yellow with dark burgundy-red bands outside. **H** 4–6ft (1.2–2m), **S** 1ft (30cm).

☼ ◊ Z5–8

Moraea huttonii
Summer-flowering corm with long, narrow, semierect, basal leaves. Tough stem bears a succession of irislike, yellow flowers, 2–3in (5–7cm) across, with brown marks near the center. **H** 2½–3ft (75cm–1m), **S** 6–10in (15–25cm).

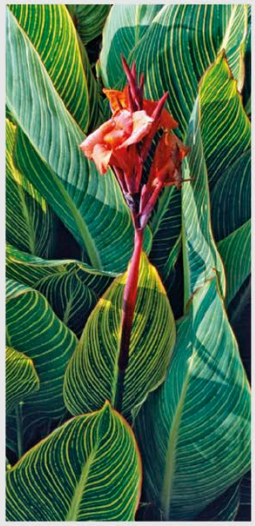
☼ ◊ Z9–10

Zantedeschia elliottiana
(Golden arum lily)
Summer-flowering tuber with heart-shaped, semierect, basal leaves with transparent marks. Bears a 6in (15cm) long, yellow spathe surrounding a yellow spadix. **H** 2–3ft (60cm–1m), **S** 1½–2ft (45–60cm). Min. 50ºF (10ºC).

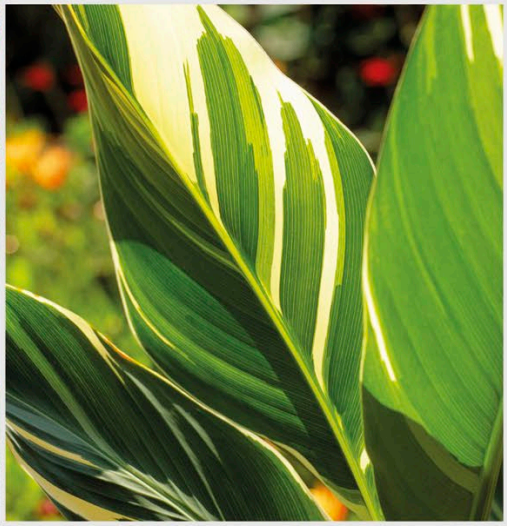
☼ ◊ Z8–10 ⓘ

CANNAS

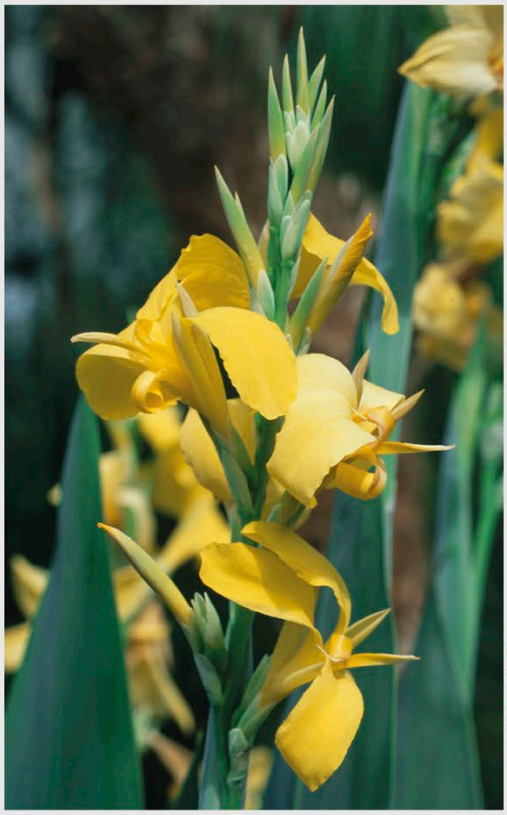
Grown as much for their dramatic foliage as for their flamboyant flowers, cannas are ideal for lush, tropical planting schemes, as an accent plant in a border, or as a bold addition to container displays. Large paddle- or broadly lance-shaped leaves are produced in a range of colors, from green to dark maroon, and many are striped or variegated, while the vibrant red, orange, or yellow flowers bloom for many months from summer to early fall. Plant these tender South American rhizomatic perennials after the last frost in spring in fertile soil and full sun—they require heat to flower well. In fall, cut down the stems and leaves when frost blackens the foliage, and store the rhizomes in a frost-free place over winter.



C. 'Striata'



C. 'Stuttgart'

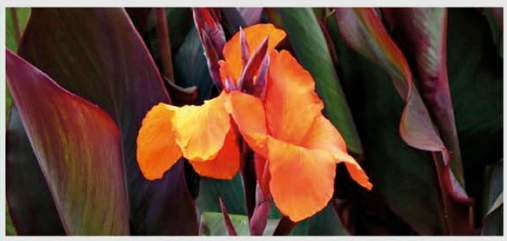


C. 'Ra'

C. 'Whithelm Pride'

C. x *ehemanii*

C. 'Picasso'



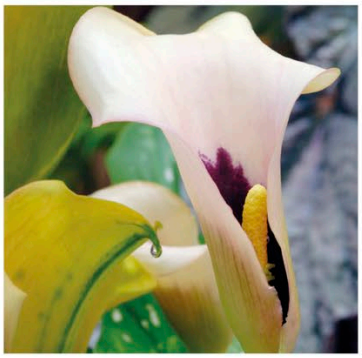
C. 'Wyoming'

C. 'Richard Wallace'

C. 'Königin Charlotte'

C. 'Louis Cottin'

ORANGE



***Zantedeschia* 'Cameo'**
Summer-flowering, tuberous perennial with arrow-shaped, erect, white-spotted, mid-green leaves. Produces long-lasting, peach to salmon-orange spathes, each with a dark maroon eye. **H** 28in (70cm), **S** 8in (20cm). Min. 41°F (5°C).

☼ ◑ Z8–11 ⓘ

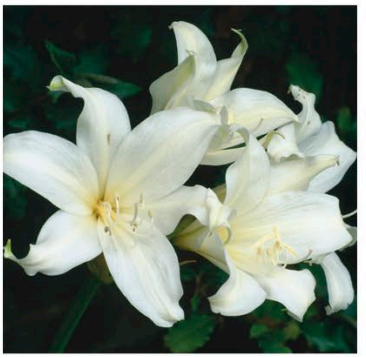
Gloriosa modesta
Deciduous, summer-flowering, tuberous, scandent climber with slender stems and lance-shaped leaves with tendrils at apex. Leaf axils bear bell-shaped, pendent, orange flowers, 1½–2in (4–5cm) across. **H** 3–6ft (1–2m), **S** 4–6in (10–15cm). Min. 46°F (8°C).

☼ ◑ Z9–11

***Canna* 'Phasion'**
Midsummer- to early-fall-flowering, rhizomatous perennial. Produces racemes of orange flowers, to 2½in (6cm) across, and dark olive-green leaves, boldly marked with green, pale yellow, and pink stripes. **H** to 5½ft (1.6m), **S** 2ft (60cm).

☼ ◑ Z7–12

WHITE



***Amaryllis belladonna* 'Hathor'**
Fall-flowering bulb with a sturdy, purple stem bearing fragrant, pure white flowers, 4in (10cm) long, with yellow throats. Strap-shaped, semierect, basal leaves are produced in late winter or spring. **H** 20–32in (50–80cm), **S** 12–18in(30–45cm).

☼ ◑ Z7–10 ⓘ

Gladiolus papilio
Clump-forming, summer- or fall-flowering corm with stolons. Bears up to 10 yellow or white flowers, suffused violet, with hooded, upper petals and darker yellow patches on lower petals. **H** to 3ft (1m), **S** 6in (15cm).

☼ ◑ Z8–10

Dietes bicolor
Evergreen, tuft-forming, summer-flowering rhizome with tough, long and narrow, erect, basal leaves. Branching stems each bear a succession of flattish, irislike, pale to mid-yellow flowers; each large petal has a brown patch. **H** to 3ft (1m), **S** 1–2ft (30–60cm).

☼ ◑ Z8–10

PINK

x *Amarcrinum memoria-corsii*
Evergreen, clump-forming bulb with wide, semierect, basal leaves. Sturdy stems bear fragrant, rose-pink flowers in loose heads in late summer and fall. **H** and **S** to 3ft (1m).

☼ ◑ Z13–15

x *Amarygia parkeri*
Early fall-flowering bulb. Sturdy stem bears a large head of funnel-shaped, deep rose flowers with yellow and white throats. Produces strap-shaped, semierect, basal leaves after flowering. **H** to 3ft (1m), **S** 2–3ft (60cm–1m).

☼ ◑ Z9–11

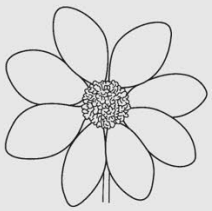
Amaryllis belladonna
(Belladonna lily)
Fall-flowering bulb with a sturdy, purple stem bearing fragrant, funnel-shaped, pink flowers, 4in (10cm) long. Forms strap-shaped, semierect, basal leaves after flowering. **H** 20–32in (50–80cm), **S** 12–18in (30–45cm).

☼ ◑ Z7–10 ⓘ

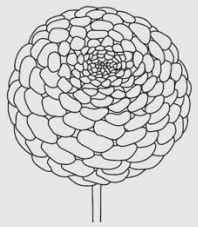
DAHLIAS

The wide spectrum of dahlia hybrids offers a bold display of color and form from summer to the first frosts in fall. Dahlias flower prolifically—in the right conditions a single plant may produce up to 100 blooms during a single season. Flowers range in size from tiny 2in (5cm) pompons to huge exhibition blooms more than 10in (25cm) across. They make beautiful border plants, the compact types are ideal for containers, and all are good for cutting. In addition, no special skills are required to grow them, except protecting the tubers from frost. Dahlias are divided into groups according to the form of their flower heads. The most commonly grown are illustrated below. Some dahlias have fimbriated (split or notched) petals, and some (such as orchid-flowering dahlias) are available in single and double forms.

Single-flowered—flowers usually have 8–10 broad petals surrounding an open, central disc.

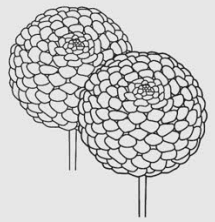


Ball—spherical, fully double flowers, sometimes slightly flattened on top, with densely packed, almost tubular, petals.



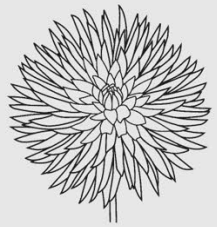
Anemone-flowered—fully double flowers, each with one or more rings of flattened ray petals surrounding a dense group of shorter, tubular petals, usually longer than the petals of single dahlias.

Pompon—a miniature form of ball flowers, but more spherical in shape, with fully double flowers no more than 2in (5cm) in diameter.

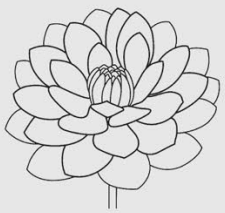


Collerette—single flowers with 8–10 broad, outer petals, and an inner 'collar' of smaller petals surrounding an open, central disc.

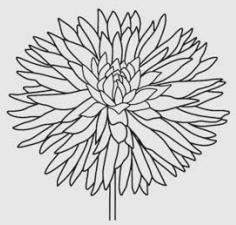
Cactus—fully double flowers with narrow, pointed petals that can be straight or curl inward and have recurved edges for more than two-thirds of their length.



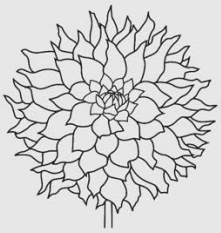
Waterlily—fully double flowers with large, generally sparse ray petals, which are flat or with slightly incurved or recurved margins, giving the flower a flat appearance.



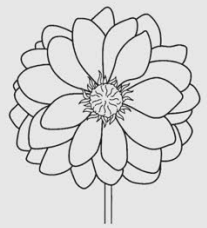
Semi-cactus—fully double flowers similar to cactus types, but with broader-based petals, the edges of which are generally recurved toward their tips.

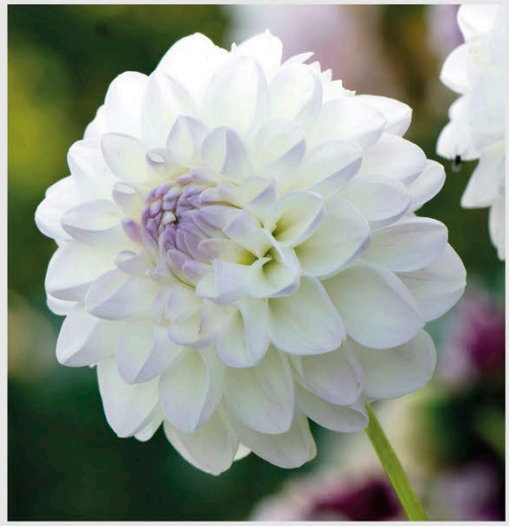


Decorative—fully double flowers with no visible central disc, and broad, flat petals, sometimes twisted, that incurve slightly at their margins.

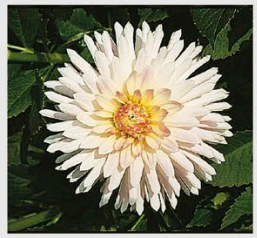


Peony-flowered—large, semidouble flowers, with several rows of irregularly arranged, flattened petals, surrounding an open, central disc.

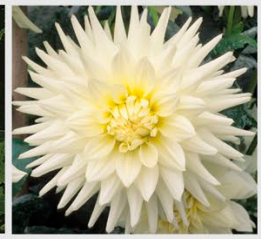




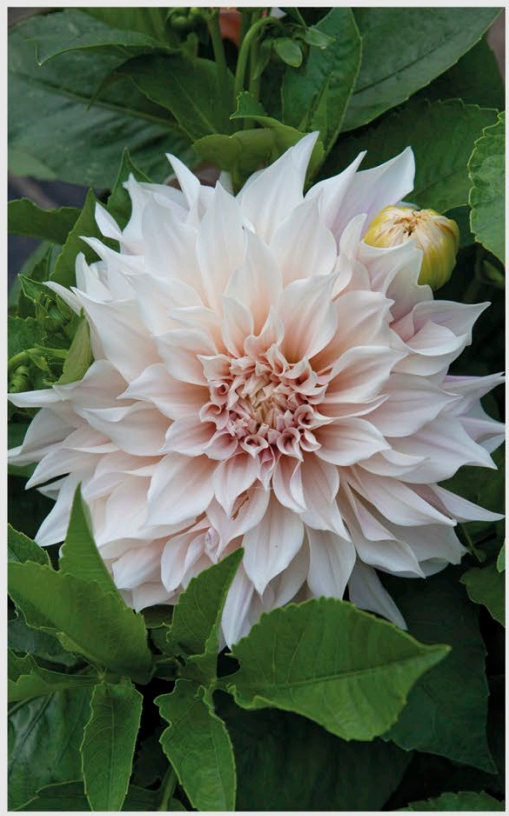
***D.* 'Eveline'** [decorative]



***D.* 'Trelyn Kiwi'** [semi-cactus]



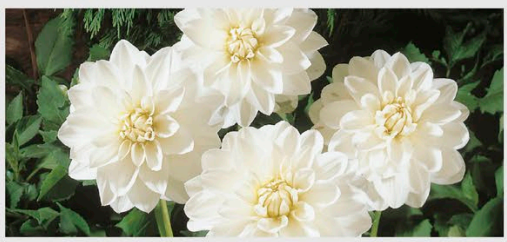
***D.* 'White Moonlight'** [semi-cactus]



***D.* 'Café au Lait'** [decorative]

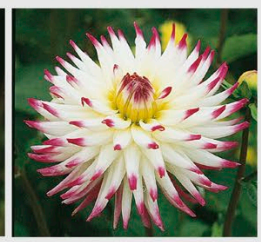
***D.* 'White Alva's'** [decorative]

***D.* 'White Klankstad'** [cactus]

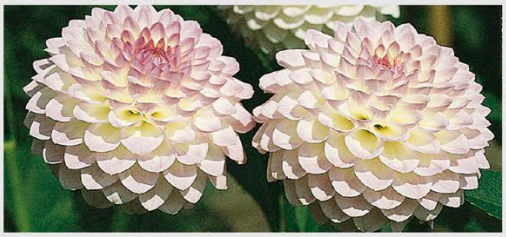


***D.* 'White Ballet'** [waterlily]

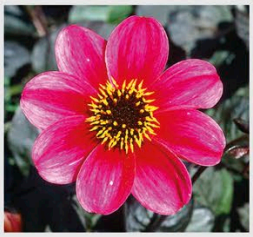
***D.* 'Small World'** [pompon]



***D.* 'Jura'** [semi-cactus]

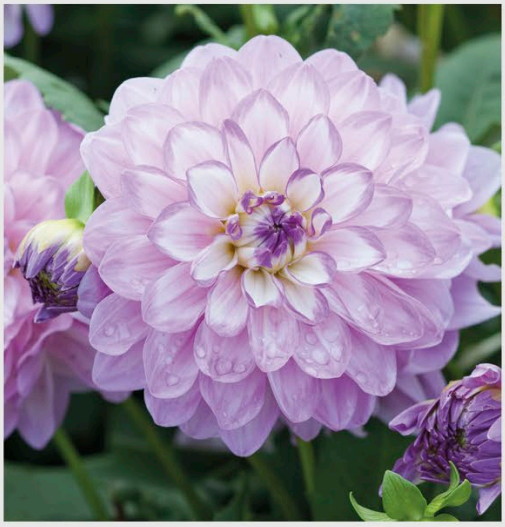


***D.* 'Brian's Dream'**
[decorative]



***D.* 'Roxy'**
[single-flowered]

D. coccinea
[single-flowered]

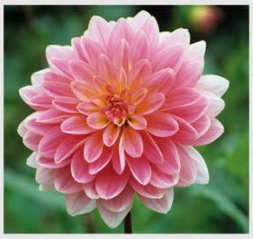


***D.* 'Carolina Moon'**
[waterlily]

***D.* 'Lilac Marston'**
[decorative]

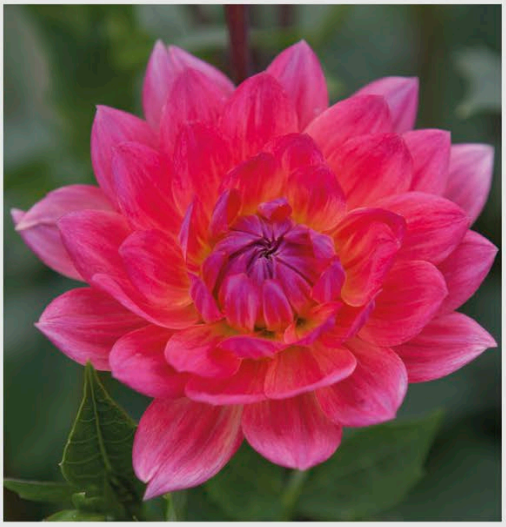
***D.* 'Geerlings Sorbet'**
[semi-cactus]

***D.* 'Bishop of Auckland'**
[single-flowered]

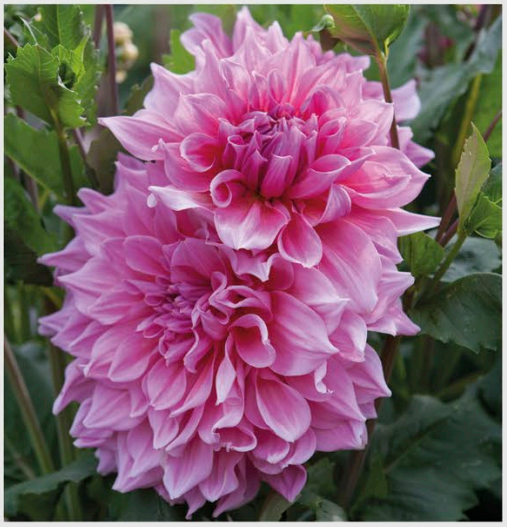


***D.* 'Gerrie Hoek'**
[waterlily]

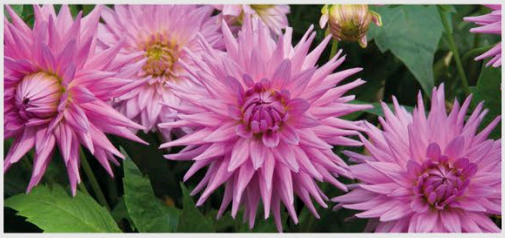
***D.* 'Franz Kafka'**
[pompon]



***D.* 'Kilburn Rose'**
[waterlily]



***D.* 'Otto's Thrill'**
[decorative]



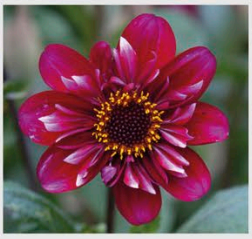
***D.* 'Ruskin Charlotte'**
[semi-cactus]

***D.* 'Ryecroft Gem'**
[decorative]

***D.* 'Berwick Wood'**
[decorative]

***D.* 'Natal'**
[pompon]

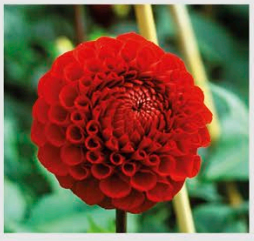
***D.* 'Sascha'**
[waterlily]



***D.* 'Hootenanny—Swan Island'** [collerette]

***D.* 'Wootton Cupid'** [ball]

***D.* 'Gallery Art Nouveau'** [decorative]



***D.* 'Cornel'** [ball]

***D.* 'Arabian Night'** [decorative]

D. **'Preston Park'**
[single-flowered]

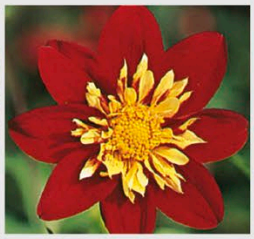
D. **'Bishop of Llandaff'**
[peony-flowered]

D. **'Akita'**
[miscellaneous]

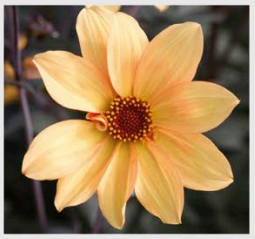
D. **'Yellow Hammer'**
[single-flowered]

D. **'Onslow Renown'**
[semi-cactus]

D. **'Comet'**
[anemone-flowered]



D. **'Chimborazo'**
[collerette]



D. **'Bishop of York'**
[single-flowered]

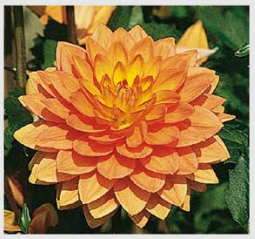
D. **'Zorro'**
[decorative]

D. **'Black Narcissus'**
[semi-cactus]

D. **'Alva's Supreme'**
[decorative]

D. **'Trengrove Millennium'**
[decorative]

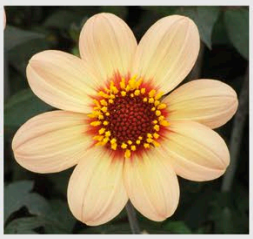
D. **'Kenora Superb'**
[semi-cactus]



D. **'Charlie Dimmock'**
[waterlily]

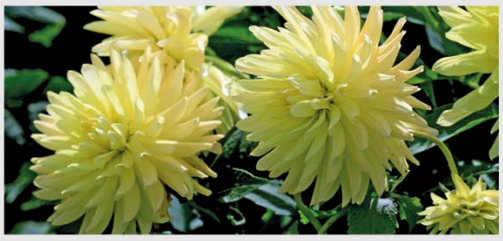
D. **'Hamari Accord'**
[semi-cactus]

D. **'Hamari Katrina'**
[semi-cactus]

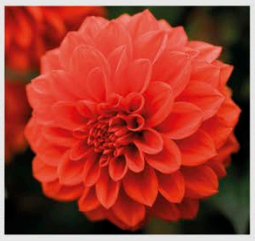


D. HAPPY SINGLE FIRST LOVE
[single-flowered]

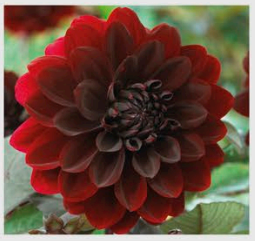
D. **'Hexton Copper'**
[ball]



D. **'Moonglow'**
[semi-cactus]



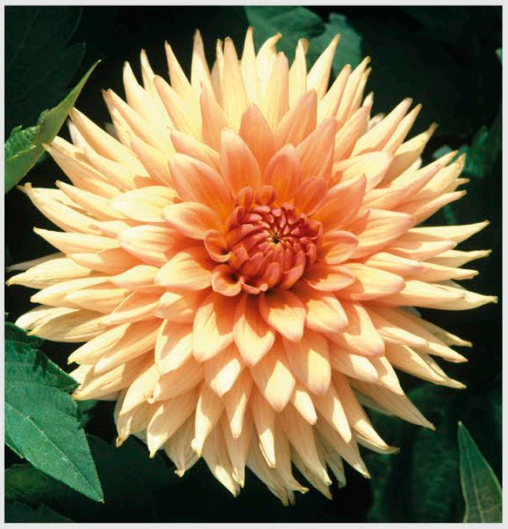
D. **'Ellen Huston'** [decorative]



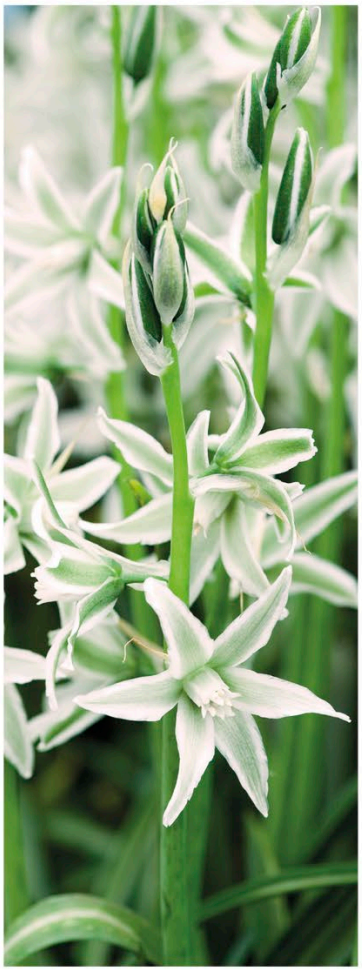
D. **'Karma Choc'**
[decorative]

D. **'Hamari Gold'** [decorative]

D. **'Wootton Impact'** [semi-cactus]



D. **'So Dainty'** [semi-cactus]

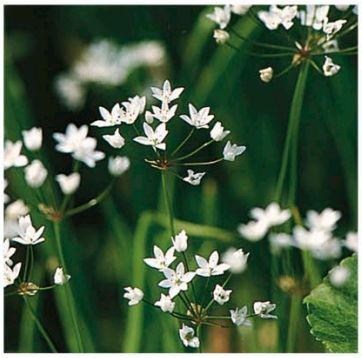


Ornithogalum nutans
Late spring-flowering bulb with 1-sided racemes of semipendent, funnel-shaped, silvery-white flowers, with a broad pale green stripe down the center of each petal. Strap-shaped, semierect, mid-green leaves each have a central, silver stripe. **H** 10in (25cm), **S** 2in (5cm).

☼ ◊Z4–9 ⓘ

***Erythronium californicum* 'White Beauty'**
Vigorous, clump-forming tuber with basal, mottled leaves. In spring has a loose spike of 1–10 reflexed, white flowers, each with a brown ring near the center. Spreads rapidly. **H** 8–12in (20–30cm), **S** 4–5in (10–12cm).

◐ ◊Z3–9

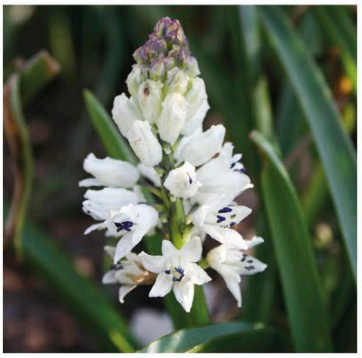


Allium neapolitanum
Spring-flowering bulb with narrow, semierect leaves on the lower quarter of flower stems. Stems each develop an umbel, 2–4in (5–10cm) across, of up to 40 white flowers. **H** 8–20in (20–50cm), **S** 4–5in (10–12cm).

☼ ◊Z7–10 ⓘ

Calochortus venustus
Late spring-flowering bulb with 1 or 2 narrow, erect leaves near the base of the branched stem. Bears 1–4 white, yellow, purple, or red flowers, with a dark red, yellow-margined blotch on each large petal. **H** 8–24in (20–60cm), **S** 2–4in (5–10cm).

☼ ◊Z6–10



Bellevalia romana
Late spring-flowering bulb with loose, conical racemes of bell-shaped, lightly fragrant, white flowers, ⅜in (8mm) long, aging to purplish-brown. Strap-shaped, basal leaves are erect and mid-green. **H** 1ft (30cm), **S** 3in (8cm).

☼ ◊Z7–9 ⓘ

Pamianthe peruviana
Evergreen, spring-flowering bulb with a stemlike neck and semierect leaves with drooping tips. Stem has a head of 2–4 fragrant, white flowers, each with a bell-shaped cup and 6 spreading petals. **H** 20in (50cm), **S** 1½–2ft (45–60cm). Min. 59ºF (15ºC).

◐ ◊Z11

Erythronium oregonum
Clump-forming, spring-flowering tuber with 2 semierect, mottled, basal leaves. Has up to 3 pendent, white flowers, with yellow eyes and often brown rings near center; petals reflex as flowers open. Increases rapidly by offsets. **H** to 14in (35cm), **S** 5in (12cm).

◐ ◊Z3–9

TULIPS

Tulips are excellent for rock gardens, formal bedding, as elegant cut flowers, and for containers. Their bold flowers are generally simple in outline and held upright, often with bright, strong colors. Many of the species deserve to be more widely grown alongside the large variety of hybrids currently available. *Tulipa* is classified in 15 divisions, which are described below.

Div. 1 Single early—cup-shaped, single flowers, often opening wide in sun, are borne from early to mid-spring.

Div. 2 Double early—long-lasting, double flowers open wide in early and mid-spring.

Div. 3 Triumph—sturdy stems bear rather conical, single flowers, becoming more rounded, in mid- and late spring.

Div. 4 Darwin hybrids—large, single flowers are borne on strong stems from mid- to late spring.

Div. 5 Single late—single flowers, usually with pointed petals, are borne in late spring and very early summer.

Div. 6 Lily-flowered—strong stems bear narrow-waisted, single flowers, with long, pointed, often reflexed petals, in late spring.

Div. 7 Fringed—flowers are similar to those in Div. 6, but have fringed petals.

Div. 8 Viridiflora—variable, single flowers, with partly greenish petals, are borne in late spring.

Div. 9 Rembrandt—flowers are similar to those in Div. 6, but have striped or feathered patterns caused by virus, and are borne in late spring.

Div. 10 Parrot—bear large, variable, single flowers, with frilled or fringed and usually twisted petals, in late spring.

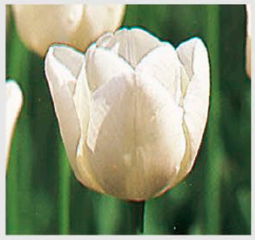
Div. 11 Double late (peony-flowered)—usually bowl-shaped, double flowers are borne in late spring.

Div. 12 Kaufmanniana hybrids—single flowers are usually bicolored, open flat in sun, and are borne in early spring; leaves are often mottled or striped.

Div. 13 Fosteriana hybrids—large, single flowers open wide in the sun from early to mid-spring. Leaves are often mottled or striped.

Div. 14 Greigii hybrids—large, single flowers are borne in mid- and late spring. Mottled or striped leaves are often wavy-edged.

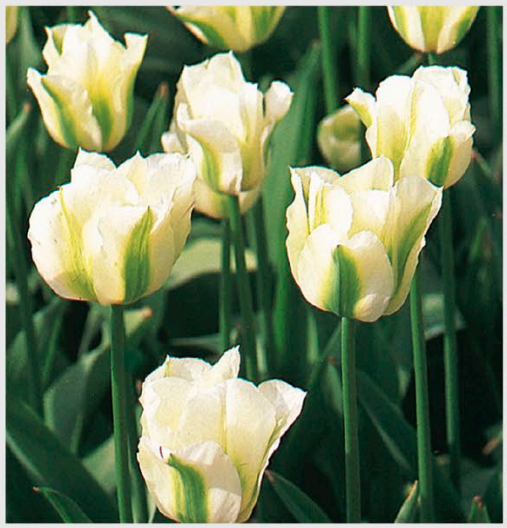
Div. 15 Miscellaneous—a diverse category of other species and their cultivars and hybrids. Flowers are borne in spring and early summer.



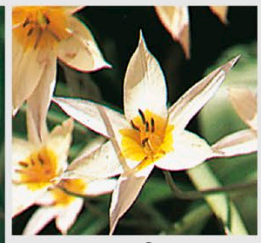
T. **'White Dream'** ⓘ [Div. 3]

T. **'White Triumphator'** ⓘ [Div. 6]

T. **'Purissima'** ⓘ [Div. 13]



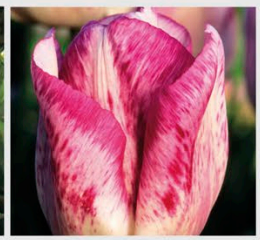
T. **'Spring Green'** ⓘ [Div. 8]



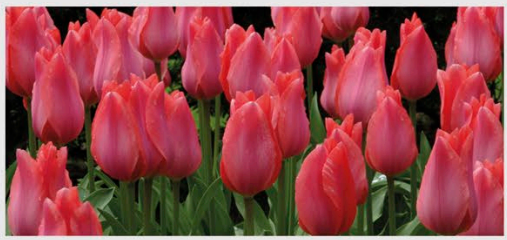
T. turkestanica ⓘ [Div. 15]

T. **'China Pink'** ⓘ [Div. 6]

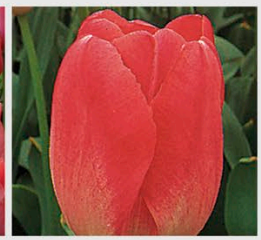
T. saxatilis **Bakeri Group** ⓘ [Div. 15]



T. **'Shirley'** ⓘ [Div. 3]



T. **'Albert Heijn'** ⓘ [Div. 13]



T. **'Dreamland'** ⓘ [Div. 5]

T. **'Ballade'** ⓘ [Div. 6]

T. **'Carnaval de Nice'** ⓘ [Div. 11]

T. **'Bird of Paradise'** ⓘ [Div. 10]

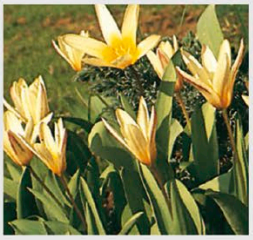
T. **'Esperanto'** ⓘ [Div. 8]

T. **'Estella Rijnveld'** ⓘ [Div. 10]

T. **'Groenland'** ⓘ [Div. 8]

***T.* 'Red Riding Hood'** ⓘ
[Div. 14]

***T.* 'Bellona'** ⓘ [Div. 1]



T. kaufmanniana ⓘ [Div. 15]

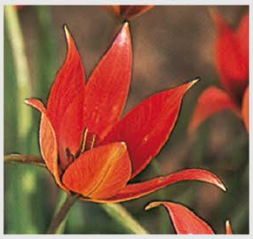
T. clusiana* var. *chrysantha
ⓘ [Div. 15]

***T.* 'Candela'** ⓘ [Div. 13]

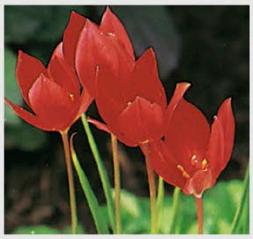
***T.* 'Negrita'** ⓘ [Div. 3]

***T.* 'Maja'** ⓘ [Div. 7]

***T.* 'Apeldoorn's Elite'** ⓘ
[Div. 4]

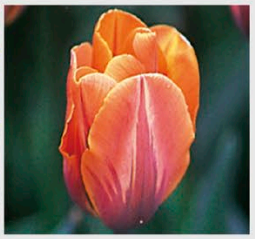


T. orphanidea ⓘ [Div. 15]

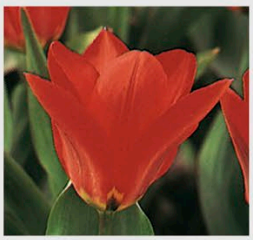


T. sprengeri ⓘ [Div. 15]

***T.* 'Golden Apeldoorn'** ⓘ [Div. 4]

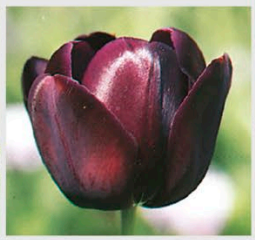


***T.* 'Prinses Irene'** ⓘ
[Div. 1]



***T.* 'Madame Lefeber'** ⓘ
[Div. 13]

***T.* 'Uncle Tom'** ⓘ [Div. 11]

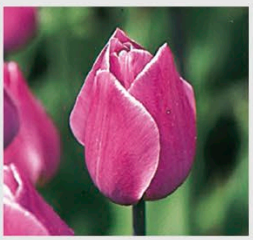


***T.* 'Queen of Night'** ⓘ [Div. 5]

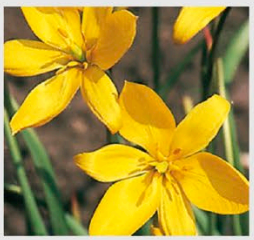
***T.* 'Glück'** ⓘ [Div. 12]

***T. praestans* 'Unicum'** ⓘ
[Div. 15]

***T.* 'Blue Parrot'** ⓘ [Div. 10]



***T.* 'Dreaming Maid'** ⓘ [Div. 3]



T. sylvestris ⓘ [Div. 15]

***T.* 'Menton'** ⓘ [Div. 5]

***T.* 'Abu Hassan'** ⓘ [Div. 3]

***T.* 'Black Hero'** ⓘ [Div. 11]

***T.* 'Artist'** ⓘ [Div. 8]

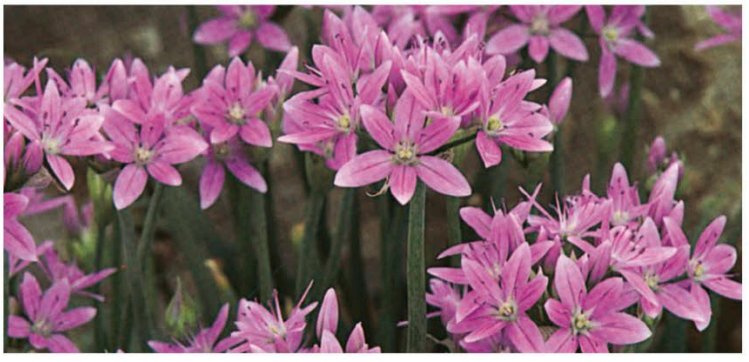
T. acuminata ⓘ [Div. 15]

***T.* 'Ballerina'** ⓘ [Div. 6]

PINK

Erythronium hendersonii
Spring-flowering tuber with 2 semierect, basal, brown- and green-mottled leaves. Flower stem bears up to 10 lavender or lavender-pink flowers, with reflexed petals and deep purple, central eyes. **H** 8–12in (20–30cm), **S** 4–5in (10–12cm).

☀ 💧Z3–9



Allium unifolium
Late spring-flowering bulb with one semierect, basal, gray-green leaf. Each flower stem bears a domed umbel, 2in (5cm) across, of up to 30 purplish-pink flowers. **H** to 1ft (30cm), **S** 3–4in (8–10cm).

☀ 💧Z4–9 ⓘ

RED

Anemone pavonina
Leafy tuber with cup-shaped, single, dark-centered, scarlet, purple, or blue flowers rising above divided, frilly leaves in early spring. **H** 16in (40cm), **S** 8in (20cm).

☀ 💧Z8–10 ⓘ

Sprekelia formosissima
(Aztec lily, Jacobean lily)
Clump-forming, spring-flowering bulb with semierect, basal leaves. Stem bears a deep red flower, 5in (12cm) across, that has 6 narrow petals with green-striped bases. **H** 6–14in (15–35cm), **S** 5–6in (12–15cm). Min. 45–50°F (7–10°C)

☀ 💧Z13–15

Fritillaria meleagris
(Snake's-head fritillary)
Spring-flowering bulb with slender stems producing scattered, narrow, gray-green leaves. Bears solitary bell-shaped, prominently checkered flowers, in shades of pinkish-purple or white. **H** to 1ft (30cm), **S** 2–3in (5–8cm).

☀ 💧Z4–9

PURPLE

Fritillaria camschatcensis
(Black sarana)
Spring-flowering bulb. Stout stems carry lance-shaped, glossy leaves, mostly in whorls. Bears up to 8 deep blackish-purple or brown flowers. Needs humus-rich soil. **H** 6–24in (15–60cm), **S** 3–4in (8–10cm).

☀ ◊ Z4–8

Sauromatum venosum
(Monarch-of-the-East, Voodoo lily)
Early spring-flowering tuber. Bears a large, acrid, purple-spotted spathe, then a lobed leaf on a long, spotted stalk. **H** 12–18in (30–45cm), **S** 12–14in (30–35cm). Min. 41–45°F (5–7°C).

☀ ◊ Z7–10

Fritillaria pyrenaica
Spring-flowering bulb with scattered, lance-shaped leaves, often rather narrow. Develops 1, or rarely 2, broadly bell-shaped flowers with flared-tipped, checkered, deep brownish- or blackish-purple petals. **H** 6–12in (15–30cm), **S** 2–3in (5–8cm).

☀ ◊ Z6–8

BLUE

***Anemone coronaria* De Caen Group 'Mister Fokker'**
Spring-flowering perennial with a knobbly tuber. Bears shallowly cup-shaped, single, violet-blue flowers, with black stamens, above rounded, divided, finely lobed, semierect, basal leaves. **H** 10in (25cm), **S** 3in (8cm).

☀ ◊ Z8–11

Muscari latifolium
Spring-flowering bulb with one strap-shaped, semierect, basal, gray-green leaf. Bears a dense spike of tiny, bell-shaped, blackish-violet to -blue flowers with constricted mouths; upper blooms are paler and smaller. **H** to 10in (25cm), **S** 2–3in (5–8cm).

☀ ◊ Z4–8

Hyacinthoides* x *massartiana
(Spanish bluebell)
Spring-flowering bulb producing strap-shaped, glossy leaves and pendent, bell-shaped, blue, white, or pink flowers. **H** to 1ft (30cm), **S** 4–6in (10–15cm).

◐ ◊ Z4–10 !

***Hyacinthus orientalis* 'Blue Jacket'**
Mid-spring-flowering bulb with a dense, cylindrical spike of highly fragrant, bell-shaped, waxy, navy-blue flowers with purple veining. Has lance-shaped, channelled, erect, bright green, basal leaves. **H** 10in (25cm), **S** 3in (8cm).

☀ ◊ Z5–9 !

Hyacinthoides non-scripta
(English bluebell)
Tuft-forming, spring-flowering bulb with strap-shaped leaves. An erect stem, arching at the apex, bears fragrant, blue, pink or white flowers. **H** 8–16in (20–40cm), **S** 3–4in (8–10cm).

◐ ◊ Z4–10 !

Ixiolirion tataricum
Spring- to early summer-flowering bulb with long, narrow, semierect leaves on the lower part of stem. Bears a loose cluster of blue flowers with a darker, central line along each petal. **H** to 16in (40cm), **S** 3–4in (8–10cm).

☀ ◊ Z10–11

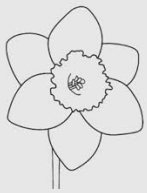
DAFFODILS

Narcissus species and hybrids grace the garden from early to late spring with diverse flowers, ranging from the tiny Cyclamineus types, with their swept-back petals, to the stately trumpet daffodils. Some are also scented, including the Poeticus and Jonquilla types and many of the small-flowered forms. Daffodils can be naturalized to form a carpet in grass or a wild garden, or used to brighten up beds and borders, but dwarf forms are best in rock or gravel gardens, or planted in pots and troughs.

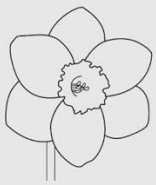
The genus is classified in 13 divisions. Their flower forms are illustrated below, with the exception of Div. 12, miscellaneous, and Div. 13, which comprise mostly wild species. Both have varying flowers, including hoop-petticoat forms, and are produced between fall and early summer.

Div. 1 Trumpet—usually solitary flowers, each with a trumpet that is as long as, or longer, than the petals. Early to late spring-flowering.

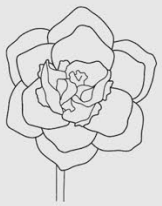
Div. 2 Large-cupped—solitary flowers, each with a cup at least one-third the length of, but shorter than, the petals. Spring-flowering.



Div. 3 Small-cupped—flowers are often borne singly, each with a cup not more than one-third the length of the petals. Spring- or early summer-flowering.

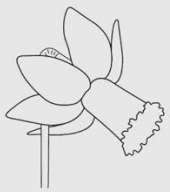


Div. 4 Double—most have solitary, large, fully or semidouble flowers with the cup and petals, or just the cup, replaced by petaloid structures. Some have smaller flowers in clusters of 4 or more. Spring- or early summer-flowering.

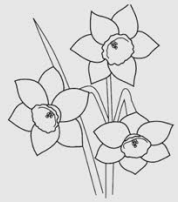


Div. 5 Triandrus—2–6 nodding flowers per stem, each with a short, sometimes straight-sided cup and narrow, reflexed petals. Spring-flowering.

Div. 6 Cyclamineus—usually 1 or 2 flowers per stem with cups that are sometimes flanged and often longer than those of Div. 5. Petals are narrow, pointed, and reflexed. Early to mid-spring flowering.

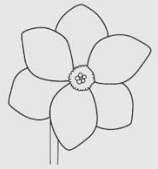


Div. 7 Jonquilla and Apodanthus—sweetly scented flowers, usually 1–5 per stem. Cups are short, sometimes flanged; petals are often flat, fairly broad and rounded. Mid- to late spring-flowering.

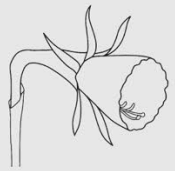


Div. 8 Tazetta—clusters of 12 or more small, fragrant flowers per stem, or 3 or 4 large ones. Cups are small and often straight-sided; petals are broad and mostly pointed. Late fall- to mid-spring-flowering.

Div. 9 Poeticus—1–2 flowers per stem, each with a small, colored cup and glistening white petals. Most are sweetly scented. Late spring- or early summer-flowering.



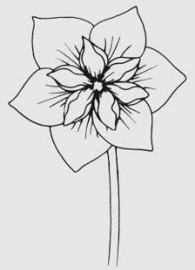
Div. 10 Bulbocodium—flowers usually borne singly on very short stems, with insignificant petals and large, widely flaring cups. Winter- to spring-flowering.



Div. 11 Split-cupped—usually solitary flowers with cups split along more than half their length. Spring-flowering.

(a) Collar—wide cup segments lie back on the petals.

(b) Papillon—narrower cup segments have tips arranged at the margin of the petals.



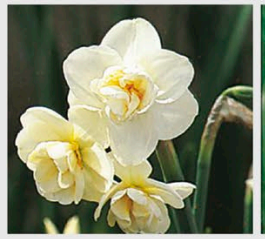
***N.* 'Dove Wings'** Ⓘ [Div. 6]

***N.* 'Ice Follies'** Ⓘ [Div. 2]

***N.* 'Actaea'** Ⓘ [Div. 9]

***N.* 'Canaliculatus'** Ⓘ [Div. 8]

***N.* 'Mount Hood'** Ⓘ [Div. 1]



***N.* 'Cheerfulness'** Ⓘ [Div. 4]

***N.* 'Empress of Ireland'** Ⓘ [Div. 1]

***N.* 'Fragrant Breeze'** Ⓘ [Div. 2]

***N.* 'Thalia'** Ⓘ [Div. 5]

***N.* 'Bridal Crown'** Ⓘ [Div. 4]

***N.* 'Broadway Star'** Ⓘ [Div. 11b]

***N.* 'Sir Winston Churchill'** ⓘ [Div. 8]

***N.* 'Jack Snipe'** ⓘ [Div. 6]

N. bulbocodium ⓘ [Div. 13]

***N.* 'Home Fires'** ⓘ [Div. 2]

***N.* 'Stratosphere'** ⓘ [Div. 7]

***N.* 'Aircastle'** ⓘ [Div. 3]

***N.* 'Pipit'** ⓘ [Div. 7]

***N.* 'Avalanche'** ⓘ [Div. 8]

***N.* 'Charity May'** ⓘ [Div. 6]

***N.* 'Pencrebar'** ⓘ [Div. 4]

***N.* 'Arkle'** [Div. 1]

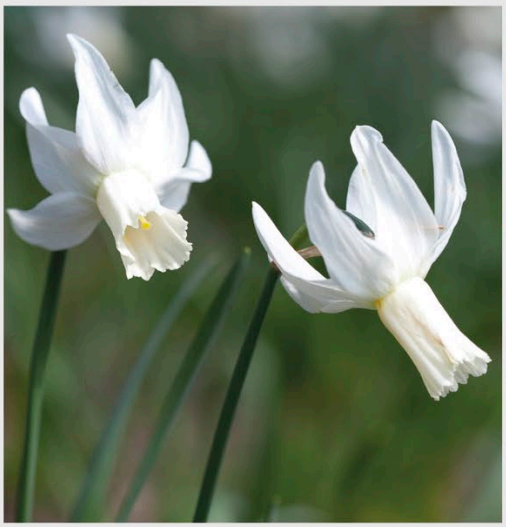
***N.* 'Panache'** ⓘ [Div. 1]

***N.* 'February Silver'** ⓘ [Div. 6]

***N.* 'Hawera'** ⓘ [Div. 5]

***N.* 'Liberty Bells'** ⓘ [Div. 5]

***N.* 'Suzy'** ⓘ [Div. 7]



***N.* 'Jenny'** ⓘ [Div. 6]

***N.* 'Cassata'** ⓘ [Div. 11a]

***N.* 'Binkie'** ⓘ [Div. 2]

***N.* 'Tahiti'** ⓘ [Div. 4]

***N.* 'Passionale'** ⓘ [Div. 2]

***N.* 'Irene Copeland'** ⓘ [Div. 4]

***N.* 'Spellbinder'** ⓘ [Div. 1]

***N.* 'Golden Ducat'** ⓘ [Div. 4]

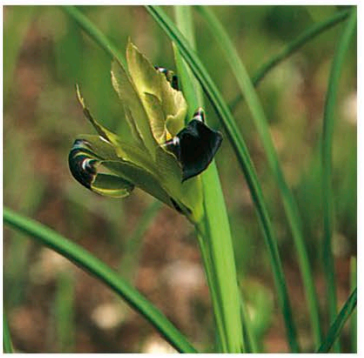
***N.* 'Ambergate'** ⓘ [Div. 2]

***N.* 'Altruist'** ⓘ [Div. 3]

GREEN

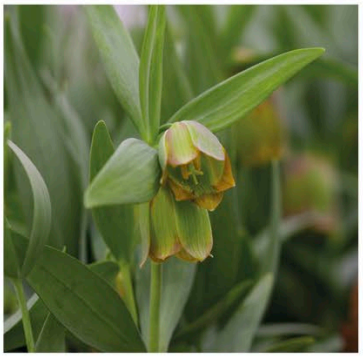
Fritillaria acmopetala
Spring-flowering bulb with slender stems that bear narrowly lance-shaped, scattered leaves, and 1 or 2 broadly bell-shaped, green flowers, with brown-stained petals flaring outward at the tips. **H** 6–16in (15–40cm), **S** 2–3in (5–8cm).

☼ ◊ Z6–8



Iris tuberosa
(Widow iris)
Spring-flowering perennial with finger-like tubers. Long, narrow, gray-green leaves are square in cross section. Bears a fragrant, yellowish-green flower with large, blackish-brown-tipped petals. **H** 8–16in (20–40cm), **S** 2–3in (5–8cm).

☼ ◊ Z7–9



Fritillaria pontica
Spring-flowering bulb with stems bearing lance-shaped, gray-green leaves, the topmost in a whorl of 3. Produces solitary, broadly bell-shaped, green flowers, 1¼–1¾in (3–4.5cm) long, often suffused brown. **H** 6–18in (15–45cm), **S** 2–3in (5–8cm).

◐ ◊ Z7–8

Arisaema triphyllum
(Jack-in-the-pulpit)
Summer-flowering tuber with 3-lobed, erect leaves. Produces green or purple spathes, hooded at tips, followed by bright red berries. **H** 16–20in (40–50cm), **S** 12–18in (30–45cm).

◐ ◊ Z4–9 ⓘ

Fritillaria cirrhosa
Spring-flowering bulb with slender stems and narrow, whorled leaves; upper leaves have tendrillike tips. Produces up to 4 widely bell-shaped flowers, purple or yellowish-green with dark purple checkered patterns. **H** to 2ft (60cm), **S** 2–3in (5–8cm).

☼ ◊ Z6–8

Ixia viridiflora
Spring- to early summer-flowering corm with very narrow, erect leaves mostly at stem base. Bears a spike of flattish, jade-green flowers, 1–2in (2.5–5cm) across, with purple-black eyes. **H** 1–2ft (30–60cm), **S** 1–2in (2.5–5cm).

☼ ◊ Z10–11

YELLOW

Calochortus luteus
(Yellow mariposa)
Late spring-flowering bulb with long, narrow, erect leaves near the base of the loosely branched stem. Each branch produces a 3-petaled, yellow flower with central, brown blotches. **H** 8–18in (20–45cm), **S** 2–3in (5–10cm).

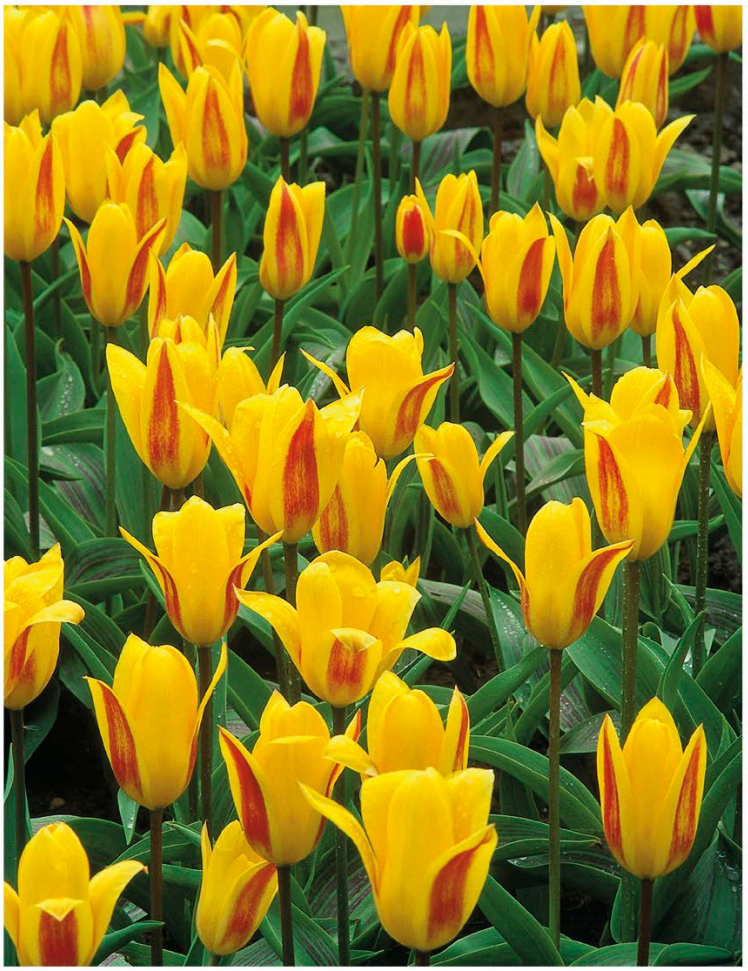
☼ ◊ Z5–10

***Erythronium* 'Pagoda'**
Robust, spring-flowering tuber with 2 semierect, basal, faintly mottled, glossy leaves. Flower stem produces up to 10 pendent, pale yellow flowers with reflexed petals. **H** 10–14in (25–35cm), **S** 6–8in (15–20cm).

◐ ◊ Z4–9

Fritillaria pallidiflora
Robust, spring-flowering bulb with broadly lance-shaped, gray-green leaves, scattered or in pairs on stem. Has 1–5 widely bell-shaped, yellow to greenish-yellow flowers, usually faintly checkered brownish-red within. **H** 6–28in (15–70cm), **S** 3–4in (8–10cm).

☼ ◊ Z4–9



***Tulipa* 'Giuseppe Verdi'**
Mid-spring-flowering bulb (Div.12) with purple-marked leaves. Yellow-margined, carmine-red flowers are golden-yellow with small, red marks inside. **H** 8in (20cm), **S** to 8in (20cm).

☼ ◊ Z3–8 ⓘ

***Narcissus* 'Grand Soleil d'Or'**
Late fall to early spring-flowering bulb (Div. 8). Flowers are sweetly scented with a dash of lemon. Each has rich golden petals and a clear tangerine cup. May be forced for winter flowering but needs staking. Excellent for cutting. **H** 1½ft (45cm), **S** to 8in (20cm).

☼ ◊ Z8–11 ⓘ

***Triteleia ixioides* 'Starlight'**
Free-flowering, late spring-flowering corm with grasslike, semierect, basal leaves. Open umbels, to 5in (12cm) across, of star-shaped, creamy-yellow flowers have a central, green stripe on each petal. Good for cut flowers. **H** 16in (40cm), **S** 3in (8cm).

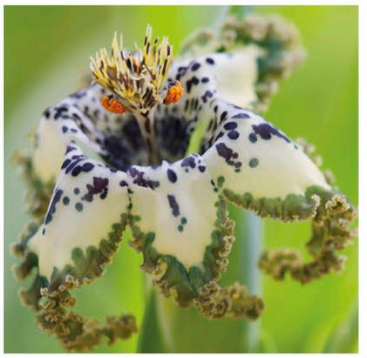
☼ ◊ Z7–13

***Hyacinthus orientalis* 'City of Haarlem'**
Late spring-flowering bulb with lance-shaped, channeled, erect, bright green, basal leaves. Produces a dense, cylindrical spike of fragrant, bell-shaped, primrose-yellow flowers. **H** 10in (25cm), **S** 3in (8cm).

◐ ◊ Z5–9 ⓘ

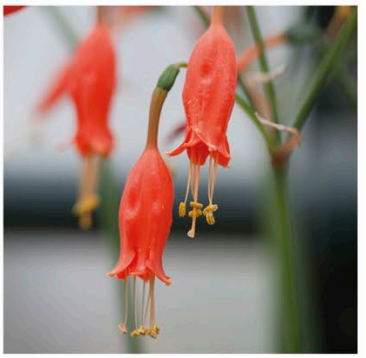
Arum creticum
Spring-flowering tuber that bears white or yellow spathes, each bottle-shaped at the base, slightly reflexed at the apex and with a protruding, yellow spadix. Has arrow-shaped, semierect, deep green leaves in fall. **H** 12–20in (30–50cm), **S** 8–12in (20–30cm).

☼ ◊ Z8–10 ⓘ



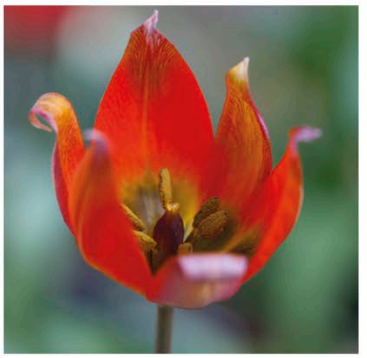
Ferraria crispa
Spring-flowering corm with leafy stem bearing a succession of upward-facing, brown or yellowish-brown flowers, 1½–2in (4–5cm) across, with 6 wavy-edged, spreading petals that are conspicuously lined and blotched. **H** 8–16in (20–40cm), **S** 3–4in (8–10cm).

☼ ◊ Z10–11



Stenomesson miniatum
Late spring-flowering bulb with strap-shaped, semierect, basal leaves. Bears a head of red or orange flowers, ¾–1½in (2–4cm) long, with yellow anthers. **H** 8–12in (20–30cm), **S** 4–6in (10–15cm). Min. 41°F (5°C).

☼ ◊ Z11–15



***Tulipa orphanidea* Whittallii Group**
Mid-spring flowering bulb (Div.15). Green leaves often have reddish margins. Stem produces 1–4 flowers, 1¼–2½in (3–6cm) long and tapered at the base. Oval petals are bright brownish-orange. **H** 12–14in (30–35cm), **S** to 8in (20cm).

☼ ◊ Z3–7

Triteleia hyacinthina
Late spring- to early summer-flowering corm with long, narrow, semierect or spreading, basal leaves. Heads of white, sometimes purple-tinged, flowers are borne on wiry stems. **H** 12–20in (30–45cm), **S** 3–4in (8–10cm).

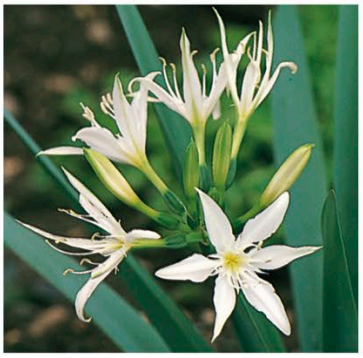
☼ 💧Z7–13

Ornithogalum narbonense
Clump-forming, late spring- to summer-flowering bulb with long, narrow, semierect, basal, gray-green leaves. Leafless stem produces a spike of star-shaped, white flowers, ¾in (2cm) across. **H** 12–16in (30–40cm), **S** 4–6in (10–15cm).

☼ 💧Z7–10 ⓘ

Ismene narcissiflora
(Peruvian daffodil)
Spring- or summer-flowering bulb with semierect, basal leaves, dying down in winter. Bears a loose head of 2–5 fragrant, white flowers. **H** to 2ft (60cm), **S** 1–1½ft (30–45cm). Min. 41°F (5°C).

◐ 💧Z8–11



Pancratium illyricum
Bulb with strap-shaped, semierect, basal, grayish-green leaves. Leafless stem bears 5–12 fragrant, 6-petaled, white flowers, 3in (8cm) across in summer. **H** 1½ft (45cm), **S** 10–12in (25–30cm).

☼ 💧Z8–11

***Zantedeschia aethiopica* 'Green Goddess'**
Robust, summer-flowering tuber with arrow-shaped, semierect, basal, green leaves. Bears several green spathes, each with a large, central, green-splashed, white area. **H** 18–39in (45cm–1m), **S** 1½–2ft (45–60cm).

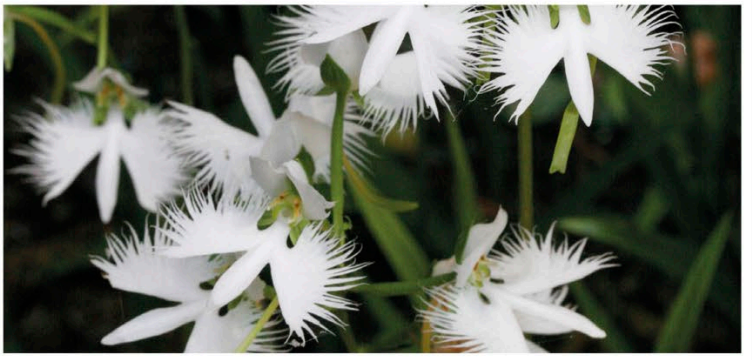
☼ 💧Z8–10 ⓘ

Arisaema sikokianum
Early summer-flowering tuber with erect leaves divided into 3–5 leaflets. Produces deep brownish-purple and white spathes, 6in (15cm) long, with clublike, white spadices protruding from the mouths. **H** 12–20in (30–50cm), **S** 1–1½ft (30–45cm).

◐ 💧Z4–9 ⓘ

Ornithogalum thyrsoides
(Chincherinchee)
Summer-flowering bulb with strap-shaped, semierect, basal leaves. Bears a dense, conical spike of cup-shaped, white flowers, ¾–1¼in (2–3cm) across. **H** 1–1½ft (30–45cm), **S** 4–6in (10–15cm).

☼ 💧Z7–10 ⓘ



Habenaria radiata
Evergreen–deciduous, terrestrial orchid with fleshy tubers and linear, gray-green, basal leaves. In midsummer, each slender flower stem bears 2 or 3 white flowers that resemble egret birds in flight. **H** 1ft (30cm), **S** 4in (10cm).

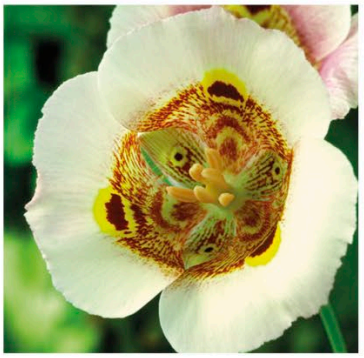
☼ 💧Z5–10

***Allium neapolitanum* Cowanii Group**
Late spring-flowering bulb with large umbels of up to 30 star-shaped, white flowers in late spring or early summer, after the lance-shaped, semierect, mid-green, basal leaves have withered. Good for cut flowers. **H** 16in (40cm), **S** 2in (5cm).

☼ ◊ Z7–9

Ornithogalum arabicum
Early summer-flowering bulb with strap-shaped, semierect leaves in a basal cluster. Bears a flattish head of up to 15 scented, white or creamy-white flowers, 1½–2in (4–5cm) across, with black centers. **H** 1–1½ft (30–45cm), **S** 4–6in (10–15cm).

☼ ◊ Z9–11 ⓘ

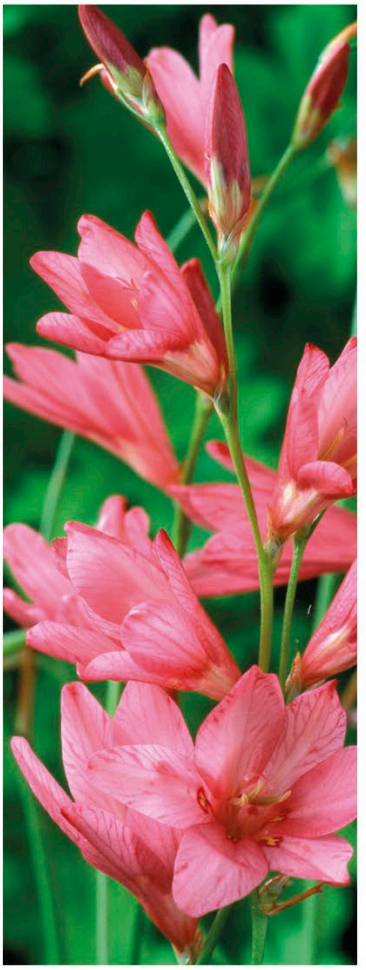


Calochortus superbus
Bulb with linear, gray-green, basal leaves. In early summer, branched stems bear 1–3 upward-facing, cup-shaped, white, creamy-yellow or lavender-blue flowers, with purplish-brown markings at the base of each petal. **H** 16in (40cm), **S** 3in (8cm).

☼ ◊ Z5–10

Eucomis comosa
Clump-forming bulb with strap-shaped, wavy-margined leaves, spotted purple beneath. Purple-spotted stem bears a spike of white or greenish-white, sometimes pink-tinted flowers, with purple ovaries. **H** to 28in (70cm), **S** 1–2ft (30–60cm).

☼ ◊ Z8–11



Tritonia disticha* subsp. *rubrolucens
Late summer-flowering corm with narrowly sword-shaped, erect leaves in a flattish, basal fan. Produces pink flowers in a loose, one-sided spike. **H** 12–20in (30–50cm), **S** 3–4in (8–10cm).

☼ ◊ Z9–10

Allium schubertii
Early summer-flowering bulb with widely strap-shaped, semierect, basal leaves. Bears large umbels of 40 or more star-shaped, pink or purple flowers on very unequal stalks, then brown seed capsules. **H** 1–2ft (30–60cm), **S** 6–8in (15–20cm).

☼ ◊ Z4–10 ⓘ

Allium senescens* subsp. *montanum
Vigorous, clump-forming, summer-flowering bulb with strap-shaped, often twisted, gray-green leaves. Bears dense umbels, ¾in (2cm) across, of up to 30 long-lasting, cup-shaped, pink flowers. **H** 1½ft (45cm), **S** 2ft (60cm).

☼ ◊ Z4–10 ⓘ

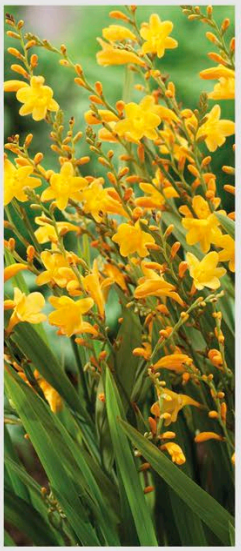
Allium cernuum
Clump-forming, summer-flowering bulb with narrow, semierect, basal leaves. Each stem produces up to 30 cup-shaped, pink or white flowers in a loose, nodding umbel, ¾–1½in (2–4cm) across. **H** 12–28in (30–70cm), **S** 3–5in (8–12cm).

☼ ◊ Z3–9 ⓘ

CROCOSMIA

Cormous perennials with flowers in vibrant shades of yellow, orange, and red, and sword-shaped, pleated foliage, crocosmias are real crowd-pleasers. The flowers are held on elegant, arching stems and bloom for many weeks between midsummer and fall. Most are easy to grow, spreading quickly when the conditions are right for them. Plants, rather than corms, are the best choice for beginners, and should be planted in spring in moist but well-drained fertile soil in sun or partial shade. Although many are hardy, borderline types benefit from a warm site near a protective wall.

C. 'Lucifer'



C. x *crocosmiiflora* 'Honey Angels'

C. x *crocosmiiflora* 'Solfatare'

C. 'Severn Sunrise'

C. x *crocosmiiflora* 'George Davison'

C. masoniorum

C. x *crocosmiiflora* 'Star of the East'

C. x *crocosmiiflora* 'Jackanapes'

MEDIUM

SUMMER

RED

Rhodophiala advena
Clump-forming, spring- to summer-flowering bulb with basal, gray-green leaves. Leafless stem bears a head of 2–8 narrowly funnel-shaped, red flowers, 2in (5cm) long. **H** to 16in (40cm), **S** 6–8in (15–20cm).

☼ ◊ Z9–10

Ranunculus asiaticus
(Persian buttercup)
Early summer-flowering perennial with clawlike tubers and long-stalked leaves both at base and on stem. Bears single or double flowers in red, white, pink, yellow, or orange. **H** 18–22in (45–55cm), **S** 4in (10cm).

☼ ◊ Z7–11 ⓘ

Lycoris radiata (Red spider lily)
Late summer-flowering bulb with a head of 5 or 6 bright rose-red flowers with narrow, wavy-margined, reflexed petals and conspicuous anthers. Produces strap-shaped, semierect, basal leaves after flowering time.
H 12–16in (30–40cm), **S** 4–6in (10–15cm).

☼ ◊ Z7–10

Phaedranassa carmioli
Spring- and summer-flowering bulb with upright, elliptic or lance-shaped, basal leaves. Bears a head of 6–10 pendent, pinkish-red flowers, with green bases and yellow-edged, green lobes at each apex. **H** 20–28in (50–70cm), **S** 12–18in (30–45cm).

☼ ◊ Z8–10

Gladiolus communis* subsp. *byzantinus
Early summer-flowering corm with a dense spike of up to 20 deep purplish-red or purplish-pink flowers, 1½–2½in (4–6cm) long. Produces a fan of sword-shaped, erect, basal leaves.
H to 28in (70cm), **S** 4–6in (10–15cm).

☼ ◊ Z8–10

PURPLE

Tulbaghia simmleri
Semievergreen, bulbous perennial with clusters of linear, mid-green leaves (wider than most species). Produces large, terminal umbels of fragrant, tubular, light to deep purple flowers in early to midsummer.
H 2ft (60cm), **S** 10in (25cm).

☼ ◊ Z7–10

Allium cristophii
Summer-flowering bulb with semierect, hairy, gray leaves that droop at tips. Bears a large, spherical umbel of 50 or more star-shaped, purplish-violet flowers, which dry well. **H** 6–16in (15–40cm), **S** 6–8in (15–20cm).

☼ ◊ Z5–8 ⓘ

Roscoea auriculata
Early fall-flowering tuber with linear to broadly lance-shaped, semierect, dark green leaves. Orchidlike, rich purple flowers are borne from upper leaf axils from late summer to fall. **H** 18in (45cm), **S** 6in (15cm).

☀ ◊ Z6–9

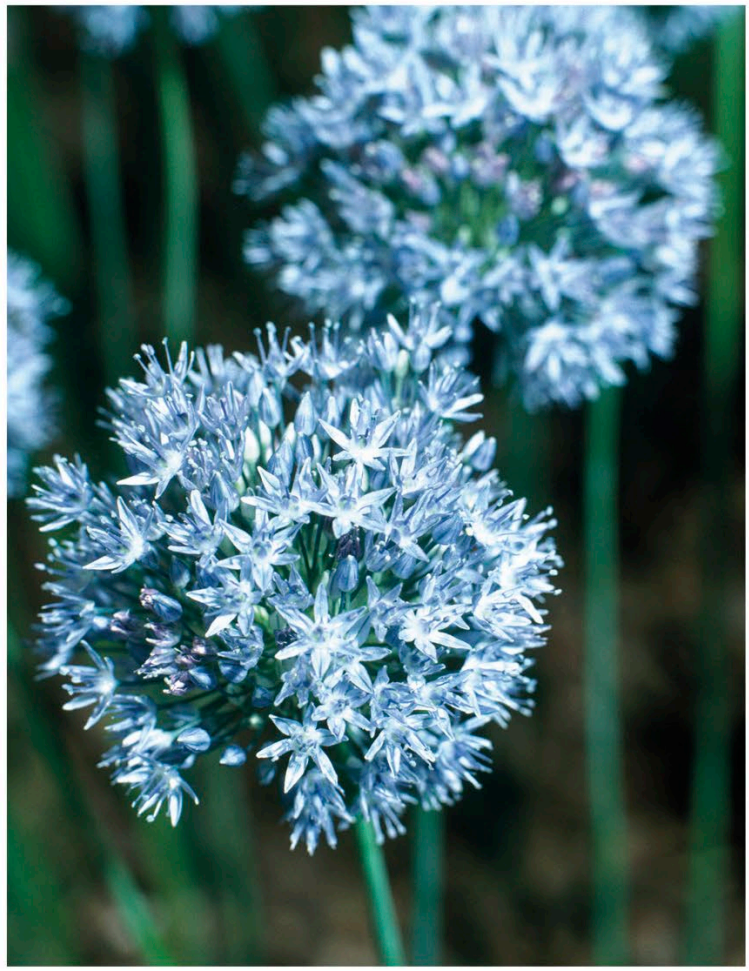
BLUE

Camassia quamash
(Common camassia, Quamash)
Clump-forming bulb with racemes of shallowly cup-shaped, rich to pale blue or white flowers in late spring and early summer. Produces long, linear, erect, basal leaves. **H** 1ft (30cm), **S** 2in (5cm).

◐ ◊ Z4–11

***Triteleia laxa* 'Koningin Fabiola'**
Midsummer-flowering corm with linear, semierect, basal leaves. These often die back before a loose umbel of funnel-shaped, deep violet-blue flowers, on long, slender stalks, is produced. Good for cut flowers.
H 1ft (30cm), **S** 2in (5cm).

☼ ◊ Z6–10



Allium caeruleum
Clump-forming, summer-flowering bulb with narrow, erect leaves on the lower third of slender flower stems, which bear 30–50 star-shaped, blue flowers in a dense, spherical umbel, 1¼–1½in (3–4cm) across. **H** 8–32in (20–80cm), **S** 4–6in (10–15cm).

☼ ◊ Z4–10 ⓘ

Triteleia laxa
Early summer-flowering corm with narrow, semierect, basal leaves. Stem bears a large, loose umbel of funnel-shaped, deep to pale purple-blue flowers, ¾–2in (2–5cm) long, mostly held upright. **H** 4–20in (10–50cm), **S** 3–4in (8–10cm).

☼ ◊ Z6–10

GREEN

Eucomis bicolor
Summer-flowering bulb with wavy-edged, semierect, basal leaves. Stem, often spotted purple, bears a spike of green or greenish-white flowers, with 6 purple-edged petals, topped by a cluster of leaflike bracts. **H** 12–20in (30–50cm), **S** 1–2ft (30–60cm).

☼ ◊ Z8–10

Arisaema jacquemontii
Summer-flowering tuber with 1 or 2 erect leaves, divided into wavy-edged leaflets. Produces slender, white-lined, green spathes that are hooded at tips and drawn out into long points. **H** 12–20in (30–50cm), **S** 12–15in (30–38cm).

◐ ◊ Z7–9 ⓘ

Arisaema griffithii
Summer-flowering tuber with large, erect leaves above a green or purple spathe, 8–10in (20–25cm) long, strongly netted with paler veins and expanded like a cobra's hood. Protect in winter or lift for frost-free storage. **H** to 2ft (60cm), **S** 1½–2ft (45–60cm).

◐ ◊ Z7–9 ⓘ

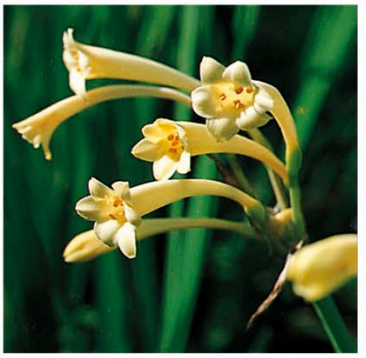
YELLOW

Allium flavum
Clump-forming, summer-flowering bulb. Leaves are linear and semierect on lower half of slender flower stem. Produces a loose umbel of up to 60 small, bell-shaped, yellow flowers on thin, arching stalks. **H** 4–14in (10–35cm), **S** 2–3in (5–8cm).

☼ ◊ Z4–10 ⓘ

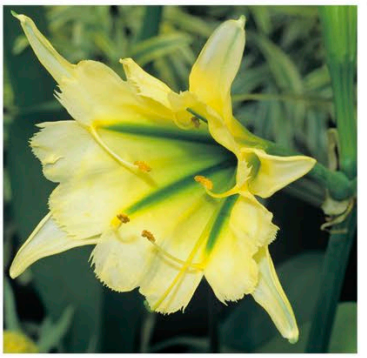
Calochortus barbatus
Summer-flowering bulb with narrow, erect leaves near the base of the loosely branched stem. Each branch bears a pendent, yellow or greenish-yellow flower that is hairy inside. **H** 1–2ft (30–60cm), **S** 2–4in (5–10cm).

☼ ◊ Z6–10



Cyrtanthus mackenii
Clump-forming, summer-flowering bulb with long, narrow, semierect, basal leaves. Leafless stems each bear a head of up to 10 fragrant, tubular, cream or yellow flowers, 2in (5cm) long and slightly curved. **H** 12–16in (30–40cm), **S** 3–4in (8–10cm).

☼ ◊ Z11



***Ismene* x *spofforthiae* 'Sulphur Queen'**
Summer-flowering bulb with strap-shaped, dark green, basal leaves. Bears terminal umbels of up to 6 large, fragrant, sulphur-yellow flowers, each with a frilly-edged, light yellow cup with green stripes and 6 spreading petals. **H** 2ft (60cm), **S** 1ft (30cm). Min. 50°F (10°C).

☼ ◊ Z10–11

Cypella herbertii
Summer-flowering bulb with a fan of narrow, sword-shaped, erect, basal leaves. Branched flower stem bears a succession of short-lived, irislike, orange-yellow flowers, each spotted purple in the center. **H** 12–20in (30–50cm), **S** 3–4in (8–10cm).

☼ ◊ Z11

***Crocosmia* x *crocosmiiflora* 'Coleton Fishacre'**
Clump-forming, late summer-flowering corm with sword-shaped, erect, basal, gray-green leaves. Produces funnel-shaped, clear golden-yellow flowers. **H** 2–2½ft (60–75cm), **S** 6–8in (15–20cm).

☼ ◊ Z6–9

ORANGE

Polianthes geminiflora
Summer-flowering tuber with narrowly strap-shaped, semierect leaves in a basal tuft. Stems each bear long spikes of downward-curving, tubular, red or orange flowers in pairs. **H** 8–16in (20–40cm), **S** 4–6in (10–15cm).

☼ 💧Z10–11

***Alstroemeria* Ligtu Hybrids**
Summer-flowering tuber with narrow, twisted leaves and heads of widely flared flowers in shades of pink, yellow, or orange, often spotted or streaked with contrasting colors. **H** 1½–2ft (45–60cm), **S** 2–3ft (60cm–1m).

☼ 💧Z9–11 ⓘ

Sandersonia aurantiaca
(Chinese-lantern lily)
Deciduous, summer-flowering, tuberous climber with a slender stem bearing scattered, lance-shaped leaves, some tendril-tipped. Orange flowers are produced in axils of upper leaves. **H** 2ft (60cm), **S** 10–12in (25–30cm).

☼ 💧Z11–14

Tigridia pavonia (Peacock flower, Tiger flower)
Summer-flowering bulb with sword-shaped, pleated, erect leaves near stem base. A succession of short-lived flowers vary from white to orange, red or yellow, often with contrasting spots. **H** to 1½ft (45cm), **S** 4–6in (12–15cm). Min. 50°F (10°C).

☼ 💧Z8–10

PINK

Zephyranthes carinata
Late summer- to early fall-flowering bulb with narrowly strap-shaped, semierect, basal leaves. Each stem bears a funnel-shaped, pink flower, held almost erect. **H** 8–12in (20–30cm), **S** 3–4in (8–10cm).

☼ 💧Z8–11

Nerine bowdenii
Fall-flowering bulb with a stout stem and strap-shaped, semierect, basal leaves. Carries a head of 5–10 glistening, pink flowers with petals that widen slightly toward wavy-margined, recurved tips. **H** 1½–2ft (45–60cm), **S** 5–6in (12–15cm).

☼ 💧Z8–10 ⓘ

Scilla scilloides
Late summer- and fall-flowering bulb with 2–4 narrowly strap-shaped, semierect, basal leaves. Stem bears a slender, dense spike of up to 30 flattish, pink flowers, ¼–½in (0.5–1cm) across. **H** to 1ft (30cm), **S** 2in (5cm).

◐ 💧Z4–8 ⓘ

***Nerine bowdenii* 'Alba'**
Fall-flowering bulb with a stout stem and strap-shaped, semierect, basal leaves. Produces a head of 5–10 white, often pink-flushed flowers; petals widen slightly toward wavy-margined, recurved tips. **H** 1½–2ft (45–60cm), **S** 5–6in (12–15cm).

☼ 💧Z8–10 ⓘ

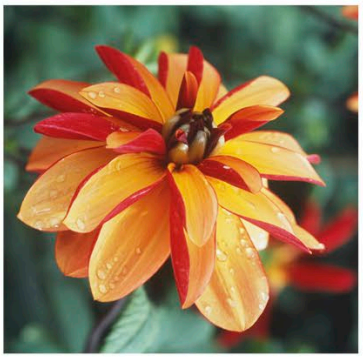
***Nerine* 'Orion'**
Fall-flowering bulb with strap-shaped, semierect, basal leaves. Stout, leafless stem bears a head of pale pink flowers with very wavy-margined petals that have recurved tips. **H** 12–20in (30–50cm), **S** 8–10in (20–25cm).

☼ 💧Z8–10 ⓘ

***Nerine undulata* Crispa Group**
Fall-flowering bulb with narrowly strap-shaped, semierect, basal leaves. Flower stem bears a head of pink flowers with very narrow petals crinkled for their whole length. **H** 1–1½ft (30–45cm), **S** 4–5in (10–12cm).

☼ 💧Z8–10 ⓘ

ORANGE



***Dahlia* 'Julie One'**
Double orchid dahlia. In summer and fall produces orange flowers, 4in (10cm) across, lightly flushed reddish pink toward the tips; florets curl inward from the mid-rib, showing reddish pink on the reverse. Good for cutting. **H** 4ft (1.2m), **S** 2ft (60cm).

☼ ◊ Z9–11

Nerine sarniensis (Guernsey lily)
Fall-flowering bulb with strap-shaped, semierect, basal leaves. Leafless stem carries a spherical head of up to 20 deep orange-pink flowers, 2½–3in (6–8cm) across, with wavy-margined petals. **H** 18–24in (45–60cm), **S** 12–15cm (5–6in).

☼ ◊ Z8–10 !

WHITE

Eucharis amazonica
Evergreen, clump-forming bulb with strap-shaped, semi-erect, basal leaves. Bears a head of up to 6 fragrant, slightly pendent, white flowers at almost any season. **H** 16–24in (40–60cm), **S** 2–3ft (60cm–1m). Min. 50ºF (10ºC).

☼ ◊ Z10–11

***Hippeastrum* 'Apple Blossom'**
Winter- to spring-flowering bulb with strap-shaped, semierect, basal leaves produced as, or just after, flowers form. Stout stem has a head of 2–6 white flowers, becoming pink at petal tips. **H** 12–20in (30–50cm), **S** 1ft (30cm). Min. 55ºF (13ºC).

☼ ◊ Z9–11 !

***Hippeastrum* 'Striped'**
Winter- to spring-flowering bulb with strap-shaped, semierect, basal leaves produced with or just after flowers. Stout stem has a head of 2–6 widely funnel-shaped flowers, striped white and red. **H** 20in (50cm), **S** 1ft (30cm). Min. 41ºF (5ºC).

☼ ◊ Z9–11 !

RED

***Hippeastrum* 'Red Lion'**
Tuft-forming, winter- and spring-flowering bulb with a stout stem bearing a head of 2–6 dark red flowers with yellow anthers. Strap-shaped leaves appear with or just after flowers. **H** 12–20in (30–50cm), **S** 1ft (30cm). Min. 55ºF (13ºC).

☼ ◊ Z9–11 !

Hippeastrum aulicum
Winter- and spring-flowering bulb with a basal cluster of strap-shaped, semierect leaves. Stout stem bears 2 red flowers with green-striped petals and green throats. **H** 12–20in (30–50cm), **S** 1ft (30cm). Min. 55–59ºF (13–15ºC).

☼ ◊ Z9–10 !

Veltheimia bracteata
Clump-forming, winter-flowering bulb with semierect, strap-shaped, basal, glossy leaves and dense spikes of pendent, tubular, pink, red, or yellowish-red flowers. **H** 12–18in (30–45cm), **S** 10–15in (25–38cm). Min. 50ºF (10ºC).

☼ ◊ Z13–15

WHITE

***Anemone blanda* 'White Splendour'**
nobbly tuber with semierect leaves that have 3 deeply toothed lobes. Bears upright, flattish, white flowers, 1½–2in (4–5cm) across, with 9–14 narrow petals, in early spring. **H** 2–4in (5–10cm), **S** 4–6in (10–15cm).

☼ ◊ Z4–8 !

Leucojum vernum (Spring snowflake)
Spring-flowering bulb with strap-shaped, semierect, basal leaves. Leafless stem carries 1 or 2 pendent, bell-shaped flowers, ⅜–¾in (1.5–2cm) long, with 6 green-tipped, white petals. **H** 4–6in (10–15cm), **S** 3–4in (8–10cm).

☼ ◑ Z4–8

Ornithogalum balansae
Spring-flowering bulb with 2 almost prostrate, inversely lance-shaped, mid-green basal leaves. Has a broad head of 2–5 flowers, glistening white inside, bright green outside, that open wide. **H** 2–6in (5–15cm), **S** 2–3in (5–8cm).

☼ ◊ Z7–10 !

Sternbergia candida
Spring-flowering bulb. Strap-shaped, semierect, basal, grayish-green leaves appear together with a fragrant, funnel-shaped, white flower, 1½–2in (4–5cm) long, borne on a leafless stem. **H** 4–8in (10–20cm), **S** 3–4in (8–10cm).

☼ ◊ Z8–10

***Puschkinia scilloides* var. *libanotica* 'Alba'**
Spring-flowering bulb with usually 2 strap-shaped, semierect, basal leaves. Produces a dense spike of star-shaped, white flowers, ⅝–¾in (1.5–2cm) across. **H** 6in (15cm), **S** 1–2in (2.5–5cm).

☼ ◊ Z3–9

***Muscari botryoides* 'Album'**
Late spring-flowering bulb with 3–4 narrow, semierect, basal leaves that widen slightly at the tips. Produces dense, conical-shaped racemes of tiny, fragrant, white flowers. **H** 6in (15cm), **S** 2in (5cm).

☼ ◊ Z2–8

Erythronium californicum
Clump-forming, spring-flowering tuber. Has 2 semierect, basal, mottled leaves. Up to 3 white or creamy-white flowers, sometimes reddish-brown externally, have reflexed petals, yellow eyes and often brown rings near centers. **H** 6–14in (15–35cm), **S** 4–5in (10–12cm).

◐ ◊ Z3–9

Ornithogalum montanum
Clump-forming, spring-flowering bulb with strap-shaped, semierect, basal, gray-green leaves. Leafless stem produces a head of star-shaped, white flowers, 1¼–1½in (3–4cm) across, striped green outside. **H** and **S** 4–6in (10–15cm).

☼ ◊ Z6–10 ⓘ

***Iris* 'Natascha'**
Bulbous iris with solitary, slightly fragrant, very pale blue, almost white flowers, with a yellow spot on each petal, borne in early spring. Has linear, mid-green leaves. **H** 6in (15cm), **S** ¾in (2cm).

☼ ◊ Z5–8 ⓘ

Ornithogalum lanceolatum
Spring-flowering, dwarf bulb with a rosette of prostrate, lance-shaped, basal leaves. Carries a head of flattish, star-shaped, white flowers, 1¼–1½in (3–4cm) across, broadly striped green outside. **H** 2–4in (5–10cm), **S** 4–6in (10–15cm).

☼ ◊ Z5–10 ⓘ

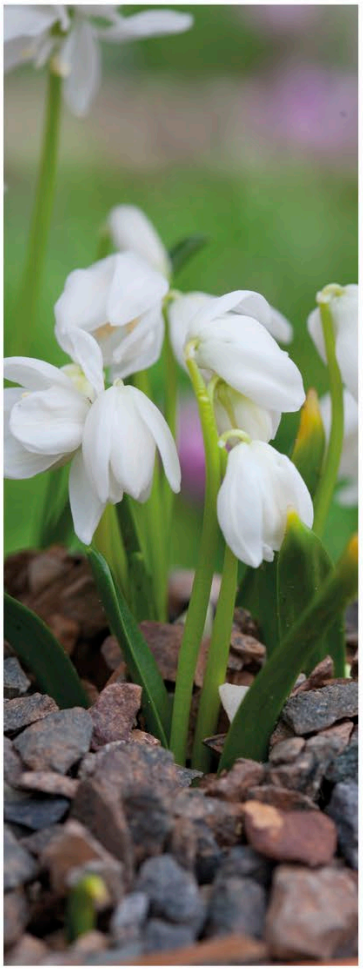
***Hyacinthus orientalis* 'White Pearl'**
Mid-spring-flowering bulb with linear to lance-shaped, channeled, erect, bright green, basal leaves. Produces a dense, cylindrical raceme of sweetly scented, tubular to bell-shaped, pure white flowers. **H** 10in (25cm), **S** 3in (8cm).

◐ ◊ Z5–9 ⓘ

WHITE

Ornithogalum umbellatum
Late spring-flowering bulb with linear, semierect, mid-green leaves with a whitish-green midrib. These fade as stems each bearing 6–20 star-shaped, white flowers, with green reverses, are produced in late spring and early summer. **H** 8in (20cm), **S** 4in (10cm).

☼ ◊ Z6–10 ⓘ



***Scilla siberica* 'Alba'**
Early to mid-spring-flowering bulb with 2–4 broadly linear, erect, basal leaves, widening toward the tips. Racemes of small, pendent, bowl-shaped, white flowers are produced at the same time as the leaves. **H** 6in (15cm), **S** 2in (5cm).

◐ ◊ Z5–8 ⓘ

PINK

Allium akaka
Spring-flowering bulb with 1–3 broad, prostrate, basal, gray-green leaves. Bears an almost stemless, spherical umbel, 2–3in (5–7cm) across of 30–40 star-shaped, white to pinkish-white flowers with red centers. **H** 6–8in (15–20cm), **S** 5–6in (12–15cm).

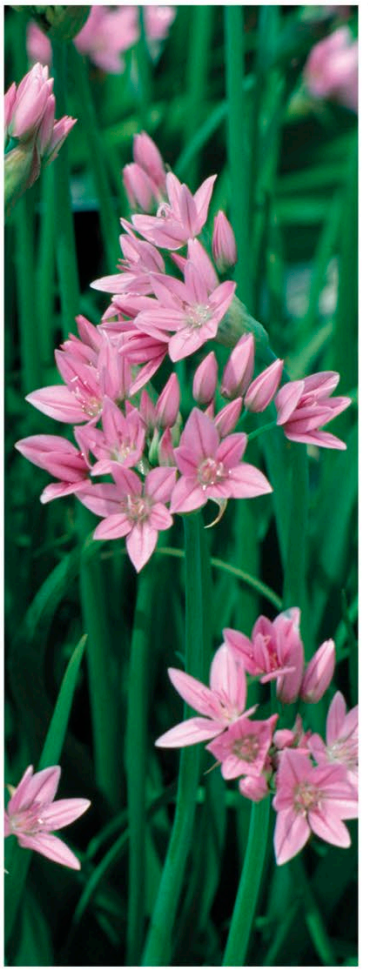
☼ ◊ Z4–9 ⓘ

Anemone tschaernjaewii
Spring-flowering tuber with 3-palmate, ovate, mid-green leaves, the leaflets shallowly lobed. Bears 5-petaled, saucer-shaped, purple-centered, white or pink flowers, ¾–1¾in (2–4.5cm) across. Needs warm, dry, summer dormancy. **H** 2–4in (5–10cm), **S** 2–3in (5–8cm).

☼ ◊ Z5–6 ⓘ

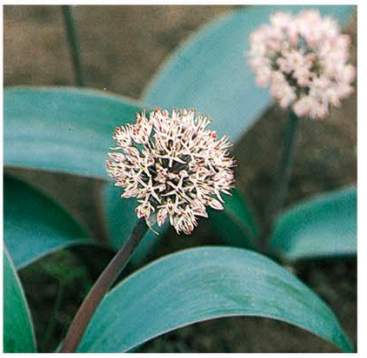
***Scilla* 'Pink Giant'**
Early spring-flowering bulb with 2 narrow, semierect, basal leaves. Leafless stem produces a spike of 5–10 flattish, white-eyed, pink flowers, ¾–1in (2–2.5cm) across. **H** 4–10in (10–25cm), **S** 1–2in (2.5–5cm).

☼ ◊ Z3–9



Allium acuminatum
Spring-flowering bulb with 2–4 long, narrow, semierect, basal leaves. Stem bears an umbel, 2in (5cm) across, of up to 30 small, purplish-pink flowers. **H** 4–12in (10–30cm), **S** 2–3in (5–8cm).

☼ ◊ Z4–9 ⓘ

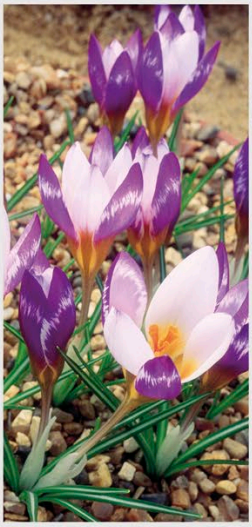


Allium karataviense
Late spring-flowering bulb with narrowly elliptic to elliptic, prostrate, basal, grayish-purple leaves. Stem bears 50 or more star-shaped, pale purplish-pink flowers in a spherical umbel, 6in (15cm) or more across. **H** to 8in (20cm), **S** 10–12in (25–30cm).

☼ ◊ Z5–9 ⓘ

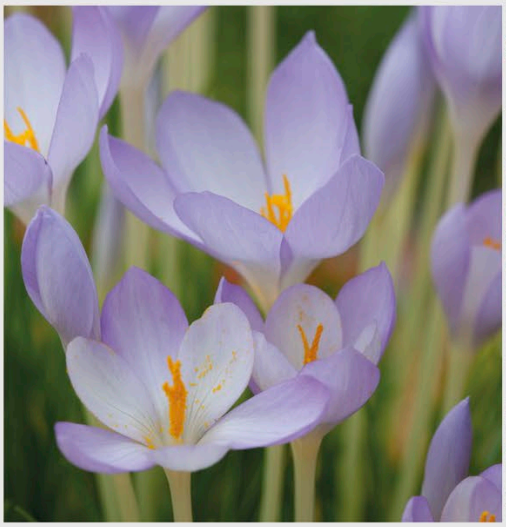
CROCUSES

Crocus species and cultivars are versatile, dwarf, bulbous plants. Most flower in late winter or early spring; a few bloom in fall. Colors range from white, cream, and yellow to pinkish-lilac and purple, and many are attractively striped or feathered with other colors. The goblet-shaped flowers open wide in full sun, in some cases revealing contrasting centers or conspicuous stamens. Most crocuses are also fragrant. Plant in rock or gravel gardens with other early flowering dwarf bulbs or perennials, in drifts in grass, or beneath deciduous trees and shrubs, where they will rapidly spread. If naturalized in grass, delay mowing until the leaves have died down. Feed with an all-purpose granular fertilizer once the flowers have faded.



C. sieberi 'Hubert Edelsten'

C. vernus 'Remembrance'



C. goulimyi [Fall]

C. 'Eyecatcher'

C. vernus 'Pickwick'

C. 'E.A. Bowles'

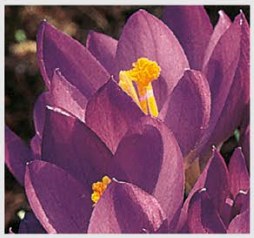
C. etruscus 'Zwanenburg'

C. 'Snow Bunting'

C. 'Blue Bird'

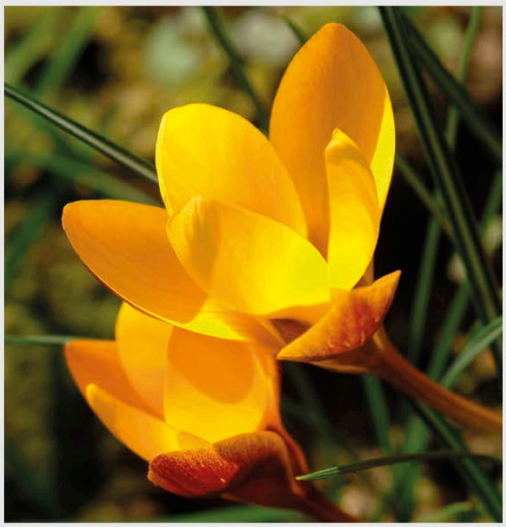
C. hadriaticus [Fall]

C. sieberi subsp. *sublimis* f. *tricolor*



C. tommasinianus 'Ruby Giant'

C. speciosus 'Conqueror' [Fall]

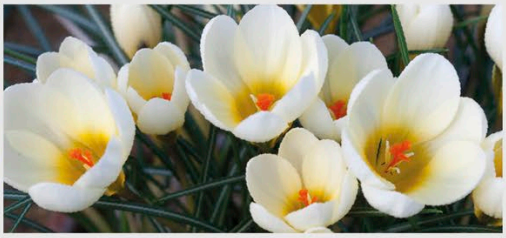


C. 'Zwanenberg Bronze'

C. vernus 'Queen of the Blues'

C. kotschyanus [Fall]

C. speciosus [Fall]

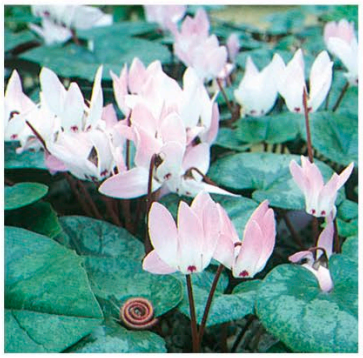


C. 'Cream Beauty'

PINK

Allium oreophilum
Spring- and summer-flowering, dwarf bulb with 2 narrow, semierect, basal leaves. Bears loose, domed umbels of up to 10 widely bell-shaped, deep rose-pink flowers, ⅝–¾in (1.5–2cm) across. **H** 2–4in (5–10cm), **S** 3–4in (8–10cm).

☼ ◊ Z4–9 ⓘ



Cyclamen libanoticum
Spring-flowering tuber with ivy-shaped, dull green leaves with lighter patterns and purplish-green undersides. Bears musty-scented, clear pink flowers, each with deep carmine marks at the mouth. Grows best in an alpine house. **H** to 4in (10cm), **S** 4–6in (10–15cm).

☼ ◊ Z11 ⓘ

Bulbocodium vernum
Spring-flowering corm with stemless, widely funnel-shaped, reddish-purple flowers. Narrow, semierect, basal leaves are produced with flowers but do not elongate until later. Dies down in summer. **H** 1¼–1½in (3–4cm), **S** 1¼–2in (3–5cm).

☼ ◊ Z7–9

Erythronium dens-canis
(European Dog's-tooth violet)
Spring-flowering tuber with 2 basal, mottled leaves. Stem has a pendent, pink, purple or white flower, with bands of brown, purple and yellow near the center and reflexed petals. **H** 6–10in (15–25cm), **S** 3–4in (8–10cm).

◐ ◊ Z3–9

***Anemone blanda* var. *rosea* 'Radar'**
Knobbly tuber with semierect, deep green leaves with 3 deeply toothed lobes. In early spring, stems each bear an upright, flattish, white-centerd, deep reddish-carmine flower with 9–14 narrow petals. **H** 2–4in (5–10cm), **S** 4–6in (10–15cm).

◐ ◊ Z4–8 ⓘ

RED

Anemone* x *fulgens
Spring- or early summer-flowering tuber with deeply divided, semierect, basal leaves. Stout stems each bear an upright, bright red flower, 2–3in (5–7cm) across, with 10–15 petals. **H** 4–12in (10–30cm), **S** 3–4in (8–10cm).

☼ ◊ Z8–11 ⓘ

Sparaxis tricolor
Spring-flowering corm with erect, lance-shaped leaves in a basal fan. Stem produces a loose spike of up to 5 flattish, orange, red, purple, pink, or white flowers, 2–2½in (5–6cm) across, with black or red centers. **H** 4–12in (10–30cm), **S** 3–5in (8–12cm).

☼ ◊ Z7–10

PURPLE

***Iris* 'Pixie'**
Bulbous iris with solitary, slightly fragrant, rich deep purple-blue flowers, with yellow midribs and white stripes, borne in late winter and early spring. Has linear, mid-green leaves. **H** 6in (15cm), **S** ¾in (2cm).

☼ ◊ Z5–9 ⓘ

Babiana rubrocyanea (Winecups)
Spring-flowering corm with lance-shaped, erect, folded leaves in a basal fan. Produces short spikes of 5–10 flowers, each with 6 petals, purple-blue at the top and red at the base. **H** 6–8in (15–20cm), **S** 2–3in (5–8cm). Min. 41°F (5°C).

☼ ◊ Z11–12

***Anemone blanda* 'Violet Star'**
Knobbly tuber with rounded, semierect, dark green, basal leaves with divided, irregularly lobed leaves. In spring, stems each bear a saucer-shaped, white-centered, amethyst-violet flower that resembles a daisy. **H** and **S** 6in (15cm).

◐ ◊ Z4–8

***Ipheion uniflorum* 'Froyle Mill'**
Spring-flowering bulb with narrow, semierect, basal, pale green leaves that smell of onions if crushed. Each leafless stem bears a star-shaped, violet-blue flower, 1¼–1½in (3–4cm) across.
H 4–6in (10–15cm), **S** 2–3in (5–8cm).

☀ ◐ Z5–9

Bellevalia hyacinthoides
Spring-flowering bulb with prostrate, narrow leaves in a basal cluster. Bears a dense spike of up to 20 bell-shaped, pale lavender-blue, almost white flowers with darker, central veins. **H** 2–6in (5–15cm), **S** 2in (5cm).

☀ Z7–9

Scilla forbesii
Early spring-flowering bulb with 2 semierect, narrow, basal leaves. Bears a spike of 5–10 outward-facing, rich blue-lilac flowers with white eyes.
H 4–10in (10–25cm), **S** 1–2in (2.5–5cm).

☀ Z3–9

***Anemone blanda* 'Atrocaerulea'**
Knobbly tuber with semierect, dark green leaves that have 3 deeply toothed lobes. In early spring, stems bear an upright, flattish, bright blue flower, 1½–2in (4–5cm) across, with 9–14 narrow petals. **H** 2–4in (5–10cm), **S** 4–6in (10–15cm).

☀ ◐ Z4–8 ⓘ

Romulea bulbocodium
Spring-flowering corm with long, semierect, threadlike leaves in a basal tuft. Slender flower stems each bear 1–6 upward-facing flowers, usually pale lilac-purple with yellow or white centers.
H 2–4in (5–10cm), **S** 1–2in (2.5–5cm).

☀ Z5–9

Scilla* x *allenii
Early spring-flowering bulb producing 2 narrow, semierect, basal, dark green leaves and a loose spike of flattish, star-shaped, deep blue flowers, ½–¾in (1–2cm) across. **H** 4–6in (10–15cm), **S** 1–2in (2.5–5cm).

☀ Z3–9

Moraea sisyrinchium
Spring-flowering corm with 1 or 2 semierect, narrow, basal leaves. Wiry stems each bear a succession of lavender- to violet-blue flowers, 1¼–1½in (3–4cm) across, with white or orange patches on the 3 larger petals.
H 4–8in (10–20cm), **S** 3–4in (8–10cm).

☀ Z9–10

***Muscari comosum* 'Plumosum'**
(Feather grape hyacinth)
Spring-flowering bulb with up to 5 strap-shaped, semierect, basal, gray-green leaves. Sterile flowers are replaced by a fluffy mass of purple threads. **H** to 10in (25cm), **S** 4–5in (10–12cm).

☀ Z4–8

Brimeura amethystina
Late spring-flowering bulb with very narrow, semierect, basal leaves. Each leafless stem bears a spike of up to 15 pendent, tubular, blue flowers.
H 4–10in (10–25cm), **S** 1–2in (2.5–5cm).

◐ Z5–9

Scilla luciliae
Early spring-flowering bulb with 2 somewhat curved, semierect, basal leaves. Leafless stem bears 1–3 upward-facing, blue flowers with white eyes. **H** 2–4in (5–10cm), **S** 1–2in (2.5–5cm).

☼ ◊ Z3–9

Scilla mischtschenkoana
Early spring-flowering bulb with 2 or 3 strap-shaped, semierect, basal, mid-green leaves. Stems elongate as cup-shaped or flattish, pale blue flowers, with darker blue veins, open. **H** 2–4in (5–10cm), **S** 2in (5cm).

☼ ◊ Z4–7 ⓘ

***Scilla siberica* 'Atrocoerulea'**
Early spring-flowering bulb with 2–4 strap-shaped, semierect, basal, glossy leaves, widening toward tips. Bell-shaped, deep rich blue flowers, ½–⅝in (1–1.5cm) long, are borne in a short spike. **H** 4–6in (10–15cm), **S** 2in (5cm).

☼ ◊ Z5–8 ⓘ

Muscari neglectum
Spring-flowering bulb. Bears 4–6 often prostrate leaves from fall to early summer. Has small, ovoid, deep blue or blackish-blue flowers with white-rimmed mouths. Increases rapidly. **H** 4–8in (10–20cm), **S** 3–4in (8–10cm).

☼ ◊ Z4–8

Muscari aucheri
Spring-flowering bulb with 2 strap-shaped, grayish-green leaves. Bears small, almost spherical, bright blue flowers with white-rimmed mouths; upper flowers are often paler. **H** 2–6in (5–15cm), **S** 2–3in (5–8cm).

☼ ◊ Z6–9

Muscari armeniacum
Spring-flowering bulb with 3–6 long, narrow, semierect, basal leaves. Produces a dense spike of small, fragrant, bell-shaped, deep blue flowers with constricted mouths that have a rim of small, paler blue or white "teeth." **H** 6–8in (15–20cm), **S** 3–4in (8–10cm).

☼ ◊ Z4–8

Tecophilaea cyanocrocus* var. *leichtlinii
Spring-flowering corm with 1 or 2 narrowly lance-shaped, semierect, basal leaves and solitary upward-facing, widely funnel-shaped, pale blue flowers with large, white centers. **H** 3–4in (8–10cm), **S** 2–3in (5–8cm).

☼ ◊ Z7–9

Tecophilaea cyanocrocus
(Chilean blue crocus)
Spring-flowering corm with 1 or 2 lance-shaped, semierect, basal leaves. Carries upward-facing, funnel-shaped, deep gentian-blue flowers, 1½–2in (4–5cm) across, with white throats. **H** 3–4in (8–10cm), **S** 2–3in (5–8cm).

☼ ◊ Z7–9

Puschkinia scilloides* var. *libanotica
(Striped squill)
Spring-flowering bulb with usually 2 strap-shaped, semierect, basal leaves. Produces a dense spike of star-shaped, pale blue flowers with a darker blue stripe down each petal center.
H 6in (15cm), **S** 1–2in (2.5–5cm).

☼ ◊ Z3–9

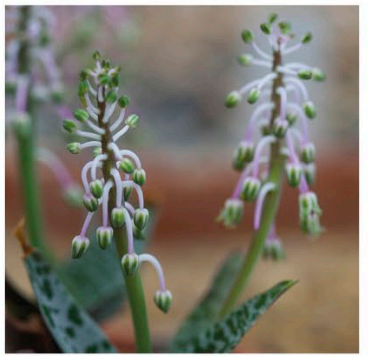
Hyacinthella leucophaea
Spring-flowering bulb with 2 narrowly strap-shaped, semierect, basal leaves and a thin, wiry, leafless flower stem. Produces a short spike of tiny, bell-shaped, very pale blue, almost white flowers. **H** 4in (10cm), **S** 1–2in (2.5–5cm).

☼ ◊ Z9–11

***Crocus* 'Blue Pearl'**
Early spring-flowering corm bearing narrow, semierect, basal leaves, with white lines along the centers. Fragrant, long-tubed, funnel-shaped, soft lavender-blue flowers, bluish-white within, have golden-yellow throats.
H 3in (7cm), **S** 5cm (2in).

☼ ◊ Z3–8

GREEN



Ledebouria socialis
Evergreen, spring-flowering bulb with lance-shaped, semierect, basal, dark-spotted, gray or green leaves. Produces a short spike of bell-shaped, purplish-green flowers.
H 2–4in (5–10cm), **S** 3–4in (8–10cm).

☼ ◊ Z11

***Arum italicum* subsp. *italicum* 'Marmoratum'**
Late spring-flowering tuber. Produces semierect leaves, with cream or white veins, in fall, followed by pale green or creamy-white spathes, then red berries in fall. **H** 6–10in (15–25cm), **S** 8–12in (20–30cm).

☼ ◊ Z7–9 ⓘ

YELLOW

Colchicum luteum
Spring-flowering corm with wineglass-shaped, yellow flowers—the only known yellow *Colchicum*. Semierect, basal leaves are short at flowering time but later expand. **H** 2–4in (5–10cm), **S** 2–3in (5–8cm).

☼ ◊ Z4–9 ⓘ

Erythronium americanum
Spring-flowering tuber with 2 semierect, basal leaves, mottled green and brown, and a pendent, yellow flower, often bronze outside, with petals reflexing in sunlight. Forms clumps by stolons.
H 2–10in (5–25cm), **S** 2–3in (5–8cm).

◑ ◊ Z3–9

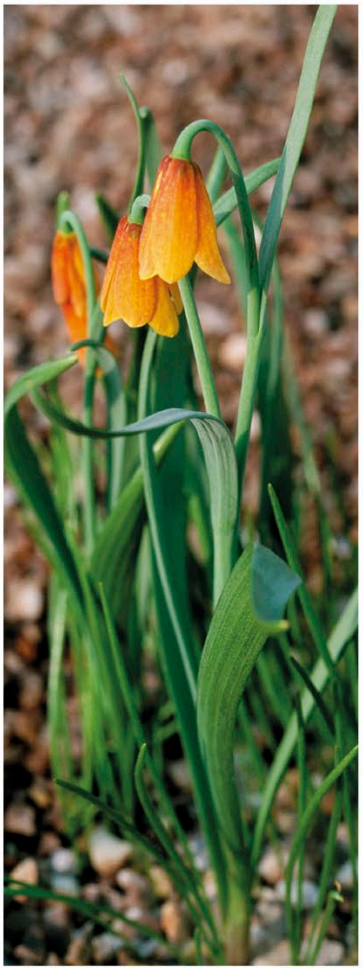
Muscari macrocarpum
Spring-flowering bulb with 3–5 semierect, basal, grayish-green leaves. Produces a dense spike of fragrant, brown-rimmed, bright yellow flowers. Upper flowers may initially be brownish-purple. **H** 4–8in (10–20cm), **S** 4–6in (10–15cm).

☼ ◊ Z7–9

ORANGE

Dipcadi serotinum
Spring-flowering bulb with 2–5 very narrow, semierect, basal leaves. Leafless stem bears a loose spike of nodding, tubular, brown or dull orange flowers, ½–⅝in (1–1.5cm) long. **H** 4–12in (10–30cm), **S** 2–3in (5–8cm).

☼ 💧Z8–10



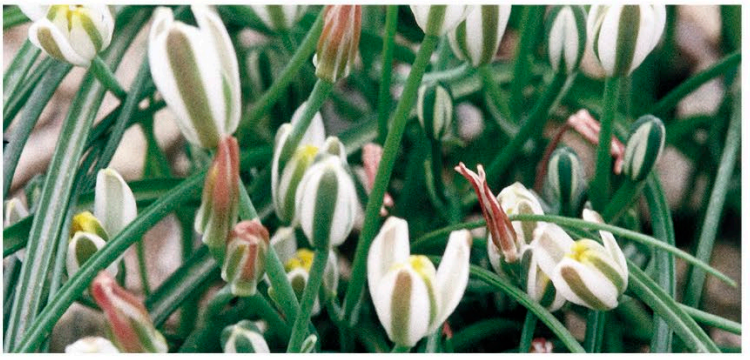
Fritillaria pudica (Yellow fritillary)
Spring-flowering bulb with stems bearing scattered, narrowly lance-shaped, gray-green leaves. Produces 1 or 2 deep yellow, sometimes red-tinged flowers, ½–1in (1–2.5cm) long. **H** 2–8in (5–20cm), **S** 2in (5cm).

☼ 💧Z2–9

WHITE

Arisaema candidissimum
Early summer-flowering tuber with large, cowllike, pink-striped, white spathes, enclosing tiny, fragrant flowers on spadices, followed by broad, 3-palmate, semierect leaves, 1ft (30cm) long. **H** 4–6in (10–15cm), **S** 1–1½ft (30–45cm).

☼ 💧Z7–9 ⓘ



Albuca humilis
Summer-flowering, dwarf bulb with very narrow, basal, dark green leaves. Produces a loose head of 1–3 cup-shaped, white flowers, ⅛in (1cm) long, striped green, later reddish, outside. **H** 2–4in (5–10cm), **S** 2–3in (5–8cm).

☼ 💧Z10–11

PINK

Allium schoenoprasum (Chives)
Clump-forming, summer-flowering bulb with narrow, hollow, erect, dark green leaves at base. Stems each bear up to 20 tiny, bell-shaped, pale purple or pink flowers in a dense umbel up to 2in (5cm) across. **H** 5–10in (12–25cm), **S** 2–4in (5–10cm).

☼ 💧Z5–11 ⓘ

Allium narcissiflorum
Clump-forming, summer-flowering bulb with very narrow, erect, gray-green leaves on the lower part of the flower stem. Produces an umbel of up to 15 bell-shaped, pinkish-purple flowers. **H** 6–12in (15–30cm), **S** 3–4in (8–10cm).

☼ 💧Z5–8 ⓘ

Cyclamen purpurascens
Summer- and fall-flowering tuber with rounded, silver-patterned leaves. Bears very fragrant, lilac-pink to reddish-purple flowers. **H** to 4in (10cm), **S** 4–6in (10–15cm).

◐ 💧Z5–9 ⓘ

RED

Cyrtanthus brachyscyphus
Clump-forming, summer-flowering bulb with strap-shaped, semierect, basal, bright green leaves. Leafless stem bears a head of 6–12 tubular, orange- or brilliant red flowers with 6 lobes.
H 8–12in (20–30cm), **S** 4–6in (10–15cm).

☼ 💧Z8–11

Freesia laxa
Early summer-flowering corm with a loose spike of up to 6 small, long-tubed, funnel-shaped, red or orange-red flowers, with darker red marks on the lower petals, borne among narrowly sword-shaped, erect, mid-green leaves.
H 8in (20cm), **S** 2in (5cm).

☼ 💧Z8–10

Haemanthus coccineus (Cape tulip)
Summer-flowering bulb with 2–3 elliptic leaves, hairy beneath, that lie flat on the ground. From summer–fall, dark red-streaked stems bear up to 100 tiny flowers with yellow stamens, surrounded by large, scarlet bracts. **H** to 1ft (30cm), **S** 8–12in (20–30cm). Min. 41°F (5°C).

☼ 💧Z8–11 ⓘ

PURPLE

Roscoea humeana
Summer-flowering tuber. Erect, broadly lance-shaped, rich green leaves form a stemlike sheath at base. Produces up to 10 long-tubed, purple flowers, each with a hooded, upper petal, a wide, pendent lip and 2 narrower petals.
H 6–10in (15–25cm), **S** 6–8in (15–20cm).

☼ 💧Z7–9

Allium cyathophorum* var. *farreri
Clump-forming, summer-flowering bulb with tufts of narrow, erect, basal leaves. Each stem bears a small, loose umbel, ⅝–1½in (1.5–4cm) across, of up to 30 bell-shaped, dark reddish-purple flowers with sharply pointed petals.
H 6–12in (15–30cm), **S** 4–6in (10–15cm).

☼ 💧Z4–9 ⓘ

Scilla peruviana
Early summer-flowering bulb with a basal cluster of up to 10 lance-shaped, semierect leaves. Stem bears a broadly conical head of up to 50 flattish, violet-blue flowers, ⅝–1¼in (1.5–3cm) across.
H 4–10in (10–25cm), **S** 6–8in (15–20cm).

☼ 💧Z8–9 ⓘ

Allium moly
Clump-forming, summer-flowering bulb with 1–3 broad, semierect, basal, gray-green leaves. Stems each bear up to 40 star-shaped, yellow flowers in a fairly dense umbel, 1½–3in (4–8cm) across. **H** 4–14in (10–35cm), **S** 4–5in (10–12cm).

☼ ◊ Z3–9 ⓘ

Chlidanthus fragrans
Summer-flowering bulb with narrow, semierect leaves in a basal tuft. Leafless stem bears a head of 3–5 fragrant, funnel-shaped, yellow flowers, 1½–2¾in (4–7cm) long. **H** 4–12in (10–30cm), **S** 3–4in (8–10cm). Min. 41–50ºF (5–10ºC).

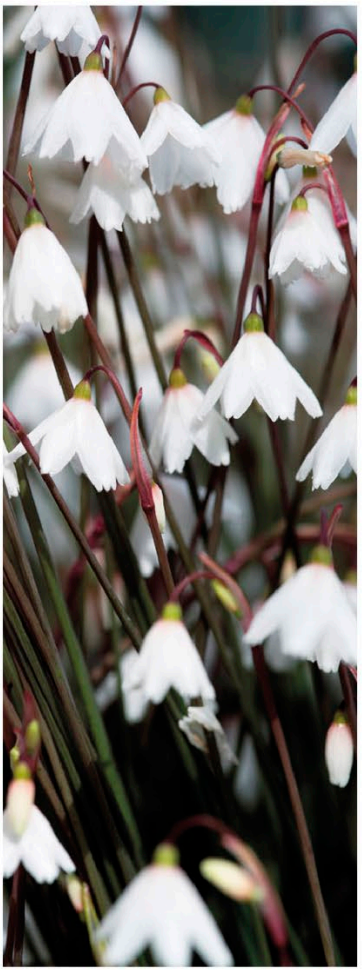
☼ ◊ Z10–11

Roscoea cautleyoides
Summer-flowering tuber. Erect, lance-shaped leaves form a stemlike sheath at base. Bears up to 5 long-tubed, yellow flowers, each with a hooded, upper petal, a broad, 2-lobed, lower lip and 2 narrower petals. **H** 6–10in (15–25cm), **S** 4–6in (10–15cm).

☼ ◊ Z6–9

***Colchicum speciosum* 'Album'**
Vigorous, fall-flowering corm with large, semierect, basal leaves in late winter or spring. Cup-shaped, white flowers successfully withstand bad weather. **H** and **S** 6–8in (15–20cm).

☼ ◊ Z4–9 ⓘ



Acis autumnalis (Autumn snowflake)
Fall-flowering bulb with thread-like, erect, basal leaves produced with, or just after, flowers. Slender stems each bear a head of 14 bell-shaped, white flowers, tinged pink at bases. **H** 4–6in (10–15cm), **S** 1–2in (2.5–5cm).

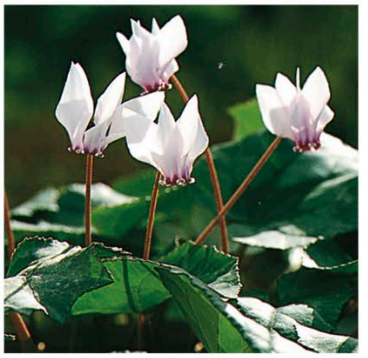
☼ ◊ Z5–9

Cyclamen hederifolium* var. *hederifolium* f. *albiflorum
Fall-flowering tuber. Pure white flowers, with reflexed petals, are borne before or with leaves, which vary but are often ivy-shaped with silvery-green patterns. **H** to 4in (10cm), **S** 4–6in (10–15cm).

◐ ◊ Z5–7 ⓘ

Zephyranthes candida
Fall-flowering bulb with narrow, erect, basal leaves forming rushlike tufts. Each leafless stem bears crocuslike, white flowers, to 2½in (6cm) across. **H** 6–10in (15–25cm), **S** 2–3in (5–8cm).

☼ ◊ Z7–9



Cyclamen africanum
Fall-flowering tuber with ivy-shaped, deep green leaves with lighter patterns. Bears pendent, white or pink flowers, with reflexed petals and darker stains around mouths, as or just before leaves emerge. **H** to 4in (10cm), **S** 4–6in (10–15cm).

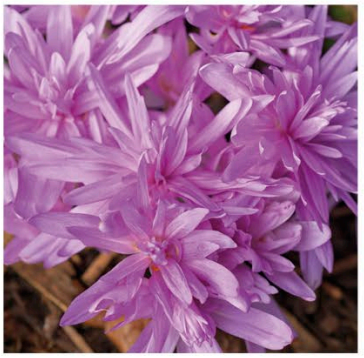
◐ ◊ Z8–9 ⓘ

Colchicum bivonae
Fall-flowering corm with large, funnel-shaped, pinkish-purple flowers, strongly checkered darker purple and with purple anthers. Produces 8–10 erect leaves in spring. **H** 4–6in (10–15cm), **S** 6–8in (15–20cm).

☼ ◊ Z4–9 ⓘ

Colchicum cilicicum
Fall-flowering corm with large, cup-shaped, pale pink to deep rose-purple flowers, sometimes slightly checkered. Very broad, semierect, basal leaves, ribbed lengthwise, emerge soon after flowers have faded. **H** and **S** 6–8in (15–20cm).

☼ ◊ Z4–9 ⓘ

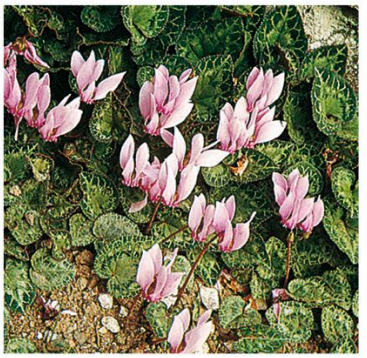


***Colchicum* 'Waterlily'**
Fall-flowering corm with rather broad, semierect, basal leaves in winter or spring. Tightly double flowers have 20–40 pinkish-lilac petals. **H** 4–6in (10–15cm), **S** 6–8in (15–20cm).

☼ ◊ Z4–9 ⓘ

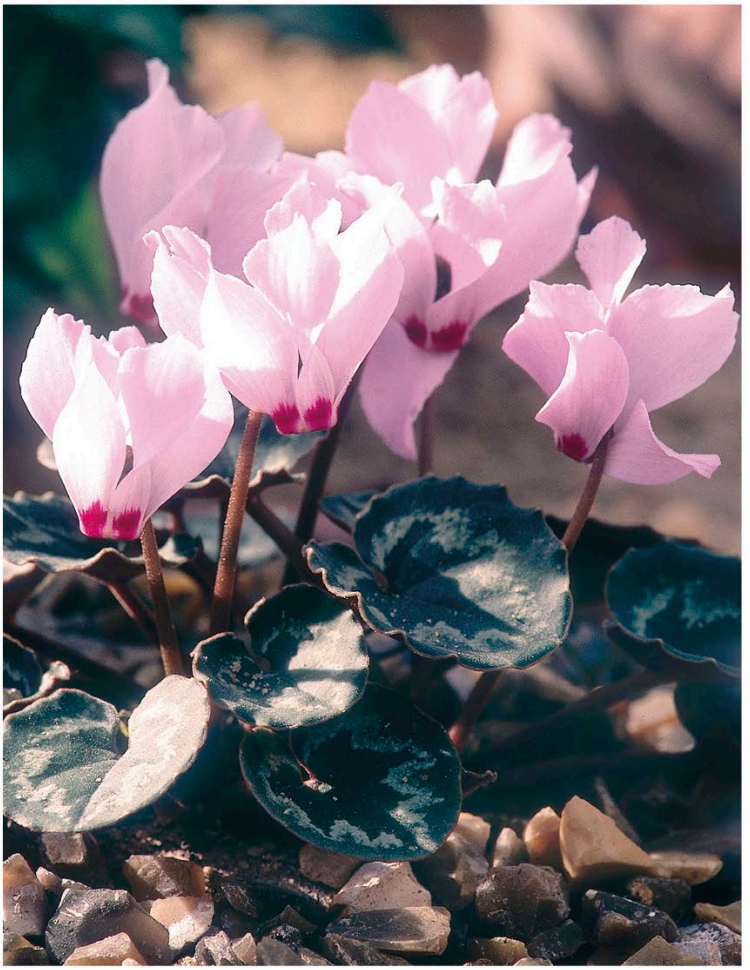
Colchicum agrippinum
Early-fall-flowering corm. Narrow, slightly waved, semierect, basal leaves develop in spring. Bears erect, funnel-shaped, bright purplish-pink flowers with a darker checkered pattern and pointed petals. **H** 4–6in (10–15cm), **S** 3–4in (8–10cm).

☼ ◊ Z4–9 ⓘ



Cyclamen graecum
Fall-flowering tuber with heart-shaped, toothed, velvety, dark green leaves, patterned silver or light green. Flowers are pink or white, with purple stains around mouths. Grows best in an alpine house. **H** to 4in (10cm), **S** 4–6in (10–15cm).

◐ ◊ Z5–9 ⓘ



Cyclamen mirabile
Fall-flowering tuber with pale pink flowers with toothed petals and dark-purple-stained mouths. Heart-shaped, patterned leaves, purplish-green beneath, are minutely toothed on margins. **H** to 4in (10cm), **S** 2–3in (5–8cm).

◐ ◊ Z8–9 ⓘ

Cyclamen hederifolium
Fall-flowering tuber. Pale to deep pink flowers, stained darker at mouths, are produced before or with foliage. Leaves vary but are often ivy-shaped with silvery-green patterns. **H** to 4in (10cm), **S** 4–6in (10–15cm).

☼ ◊ Z5–7 ⓘ

Cyclamen rohlfsianum
Fall-flowering tuber with coarsely toothed leaves, zoned with light and dark green patterns, and pale pink-lilac flowers, stained darker at mouths. **H** to 4in (10cm), **S** 4–6in (10–15cm).

☼ ◊ Z8–9 ⓘ

Colchicum x byzantinum
Robust, fall-flowering corm with up to 20 large, funnel-shaped, pale purplish-pink flowers, 4–6in (10–15cm) long. In spring, produces very broad, semierect, basal leaves, ribbed lengthwise. **H** and **S** 6–8in (15–20cm).

☼ ◊ Z4–9 ⓘ

Habranthus robustus
Late summer- to early fall-flowering bulb with narrowly strap-shaped, semierect, basal leaves. Leafless flower stems each bear a funnel-shaped, pink flower inclined at an angle. **H** 8–12in (20–30cm), **S** 3–4in (8–10cm).

☼ ◊ Z7–10

Colchicum fallale
(Autumn crocus, Meadow saffron)
Fall-flowering corm with up to 8 long-tubed, wineglass-shaped, purple, pink or white flowers, followed by 3–5 large, strap-shaped, semierect, basal, glossy leaves in spring. **H** and **S** 4–6in (10–15cm).

☼ ◊ Z4–9 ⓘ

Cyclamen cilicium
Fall-flowering tuber with broadly heart-shaped leaves that have light and dark green zones. Bears white or pink flowers, each with a dark purple stain at the mouth, just before or with leaves. **H** to 4in (10cm), **S** 2–4in (5–10cm).

☼ ◊ Z5–9 ⓘ

***Galanthus* 'Atkinsii'**
Vigorous, late winter- and early spring-flowering bulb with strap-shaped, semierect, basal, grayish-green leaves. Each stem bears a slender, white flower with a green mark at the apex of each inner petal. **H** 4–10in (10–25cm), **S** 2–3½in (5–9cm).

☼ ◑ Z3–9 ⓘ

Galanthus elwesii
Late winter- and early spring-flowering bulb with semierect, basal, gray-green leaves that widen gradually toward tips. Each inner petal of the white flowers bears green marks at the apex and base, which may merge. **H** 4–12in (10–30cm), **S** 2–3in (5–8cm).

☼ ◑ Z3–9 ⓘ

***Crocus sieberi* 'Albus'**
Spring-flowering corm bearing narrow, semierect, basal leaves, with white lines along the centers. Scented, white flowers have large, deep yellow areas in throats and purple staining outside. **H** 1¼in–1¾in (3–4.5cm), **S** 2in (5cm).

☼ ◑ Z3–8

***Galanthus* 'Hill Poë'**
Early spring-flowering bulb with strap-shaped, semierect, gray-green leaves. Produces rosetted, double, white flowers, to 1¼in (3cm) long, with 4 larger outer petals and shorter, tightly packed, green-tipped inner petals. **H** 4–7in (10–18cm), **S** 2–3in (5–8cm).

☼ ◑ Z4–7

Galanthus gracilis
Late winter- and early spring-flowering bulb with slightly twisted, strap-shaped, semierect, basal, gray-green leaves. Bears white flowers with 3 inner petals, each marked with a green blotch at the apex and base. **H** 4–6in (10–15cm), **S** 2–3in (5–8cm).

☼ ◑ Z3–9 ⓘ

Galanthus ikariae
Late winter- and early spring-flowering bulb with strap-shaped, semierect, basal, glossy, bright green leaves. Produces one white flower, ⅝–1in (1.5–2.5cm) long, marked with a green patch at the apex of each inner petal. **H** 4–10in (10–25cm), **S** 2–3in (5–8cm).

☼ ◑ Z3–9 ⓘ

***Galanthus nivalis* 'Flore Pleno'** (Double common snowdrop)
Late winter- and early spring-flowering bulb with semierect, basal, gray-green leaves. Bears rosetted, many-petaled, double, white flowers, some inner petals having a green mark at the apex. **H** 4–6in (10–15cm), **S** 2–3in (5–8cm).

☼ ◑ Z3–8 ⓘ

***Galanthus nivalis* 'Pusey Green Tip'**
Late winter- and early spring-flowering bulb with narrowly strap-shaped, semierect, basal, gray-green leaves. Each stem bears a white flower with many mostly green-tipped petals. **H** 4–6in (10–15cm), **S** 2–3in (5–8cm).

☼ ◑ Z3–8 ⓘ

Galanthus plicatus* subsp. *byzantinus
Late winter- and early spring-flowering bulb. Semierect, basal, deep green leaves have a gray bloom and reflexed margins. White flowers have green marks at bases and tips of inner petals. **H** 4–8in (10–20cm), **S** 2–3in (5–8cm).

☼ ◑ Z3–9 ⓘ

***Galanthus nivalis* 'Sandersii'**
Late winter- and early spring-flowering bulb with narrowly strap-shaped, semierect, basal, gray-green leaves. Flowers, ⅝–¾in (1.5–2cm) long, are white with yellow patches at the apex of each inner petal. **H** 4in (10cm), **S** 1–2in (2.5–5cm).

☼ ◑ Z3–8 ⓘ

Galanthus woronowii
Late winter- to early spring-flowering bulb with inversely lance-shaped, semierect, basal, glossy to matte, dark to mid-green leaves. Produces white flowers, ¾–1in (2–2.5cm) long, with a green mark at the apex of each inner petal. **H** 4–6in (10–15cm), **S** 2–3in (5–8cm).

☼ ◑ Z4–7

Galanthus rizehensis
Late winter- and early spring-flowering bulb with very narrow, strap-shaped, semierect, basal, dark green leaves. Produces white flowers, ⅝–¾in (1.5–2cm) long, with a green patch at the apex of each inner petal. **H** 4–8in (10–20cm), **S** 2in (5cm).

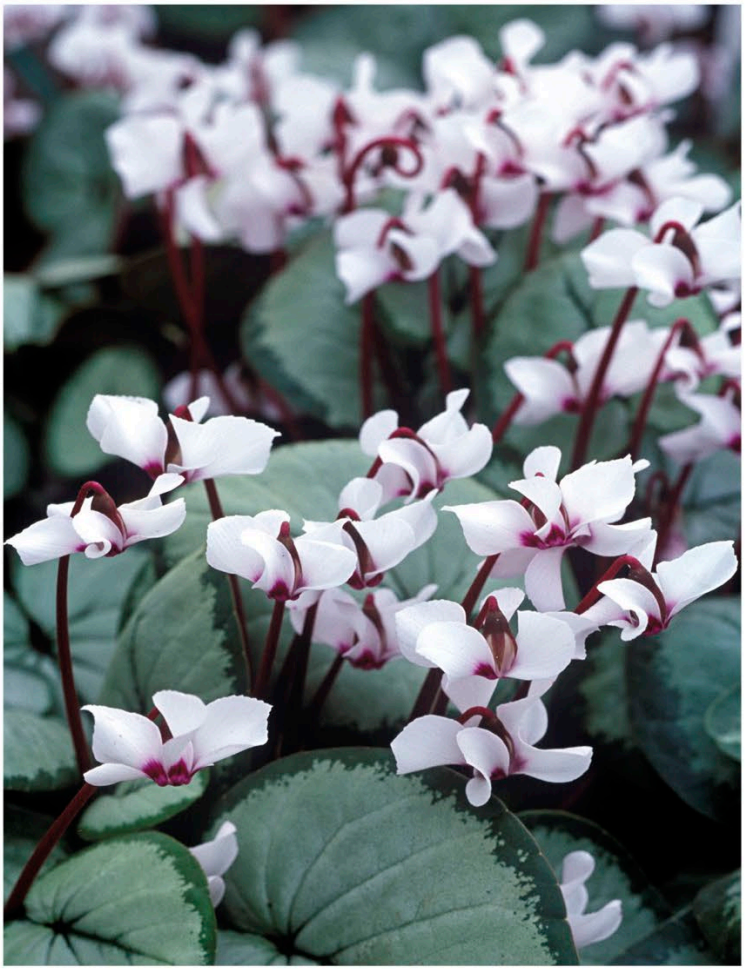
☼ ◑ Z3–9

Cyclamen coum* subsp. *coum* f. *albissimum
Winter-flowering tuber with rounded, deep green leaves, sometimes silver-patterned. Produces white flowers, each with a maroon mark at the mouth. **H** to 4in (10cm), **S** 2–4in (5–10cm).

☼ ◯ Z5–9 ⓘ

***Galanthus nivalis* 'Scharlockii'**
Vigorous, late winter- and early spring-flowering bulb with semierect, basal, gray-green leaves. Has white flowers, with green marks at the apex of inner petals, overtopped by 2 narrow spathes that resemble a donkey's ears. **H** 4–6in (10–15cm), **S** 2–3in (5–8cm).

☼ ◑ Z3–8 ⓘ



***Cyclamen coum* subsp. *coum* f. *coum* Pewter Group 'Maurice Dryden'**
Winter- to early spring-flowering tuber with rounded, silver leaves edged dark green. Produces a succession of white flowers, occasionally pink flushed, with dark purple-pink mouths. **H** and **S** 4–5in (10–12cm).

☼ ◯ Z5–9 ⓘ

PINK

***Cyclamen coum* subsp. *coum* f. *coum* Pewter Group**
Winter- to early spring-flowering tuber with rounded, dark green-margined, silvery-green leaves, with a dark green center. Produces a succession of flowers in shades of pink with dark purple-pink mouths. **H** and **S** 4–5in (10–12in).

☼ ◊ Z5–9 ⓘ

Cyclamen coum
Winter-flowering tuber with rounded leaves, plain deep green or silver-patterned. Produces bright carmine flowers with dark stains at mouths. **H** to 4in (10cm), **S** 2–4in (5–10cm).

☼ ◊ Z5–9 ⓘ

Cyclamen persicum
Winter- or spring-flowering tuber with heart-shaped leaves, marked light and dark green, and silver. Bears fragrant, slender, white or pink flowers, 1¼–1½in (3–4cm) long, with carmine mouths. **H** 4–8in (10–20cm), **S** 4–6in (10–15cm). Min. 50ºF (10ºC).

☼ ◊ Z7–11 ⓘ

YELLOW

Eranthis hyemalis (Winter aconite)
Clump-forming tuber. Bears stalkless, cup-shaped, yellow flowers, ¾–1in (2–2.5cm) across, from late winter to early spring. A cut, leaflike bract forms a ruff beneath each bloom. **H** 2–4in (5–10cm), **S** 3–4in (8–10cm).

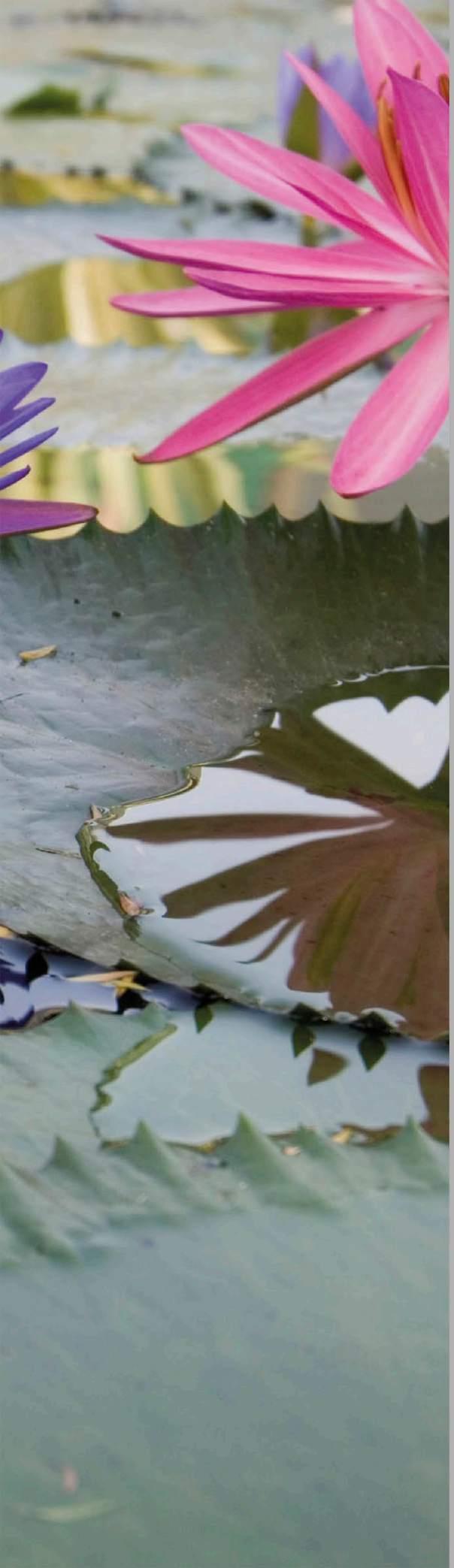
☼ ◊ Z4–9 ⓘ

***Lachenalia aloides* 'Nelsonii'**
Winter- to spring-flowering bulb with 2 strap-shaped, purple-spotted, semierect, basal leaves. Bears a spike of 10–20 pendent, tubular, green-tinged, bright yellow flowers, 1¼in (3cm) long. **H** 6–10in (15–25cm), **S** 2–3in (5–8cm).

☼ ◊ Z11

Lachenalia quadricolor
Winter- to spring-flowering bulb with 2 strap-shaped, semierect, basal leaves. Produces a spike of 10–20 purplish-red buds opening to greenish-yellow or -orange flowers. **H** 6–10in (15–25cm), **S** 2–3in (5–8cm).

☼ ◊ Z11



WATER AND BOG PLANTS

The sound and reflective qualities of water have long been used to animate garden designs, and whether tiny or large, formal or informal, every garden has space for a water feature. A pond, pool, or container also greatly extends the range of plants that you can grow. These plants are classified according to the depth of water required for them to thrive, and include deep-water aquatics, marginal plants, and moisture-lovers or bog plants. Together, they offer a succession of interest, providing a diversity of foliage, form, and flower color. Informal ponds with sloping sides and richly planted banks will also encourage a wide range of wildlife, including frogs, toads, and birds.

WATER AND BOG PLANTS

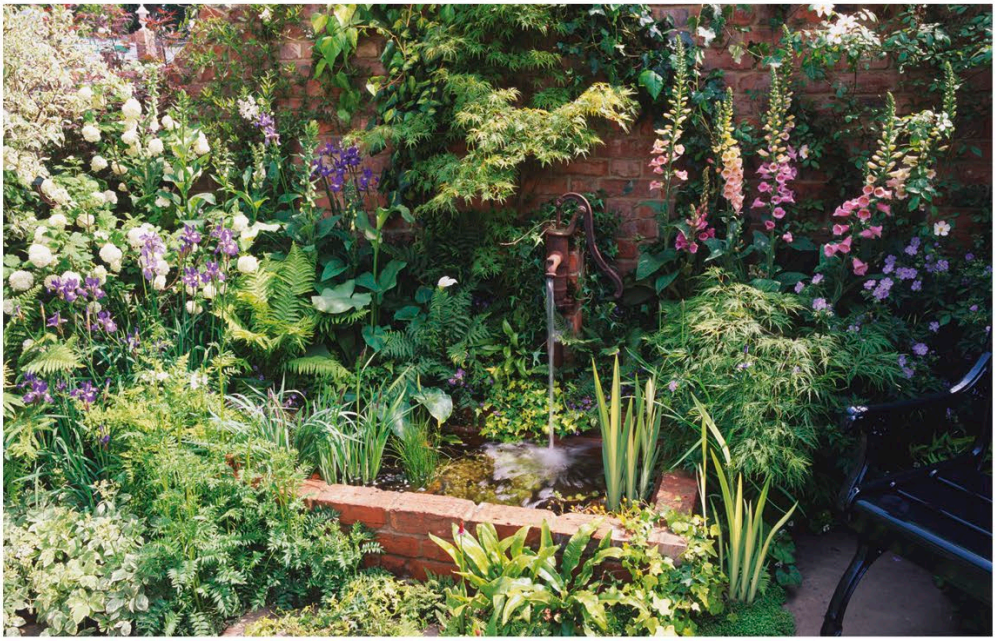
Still or moving water reflects light and adds a dynamic quality to garden designs. It also greatly extends the range of plants that you can grow, with aquatic and moisture-loving types injecting color, texture, and form into water features. They also provide an excellent wildlife habitat.

What are water plants?

The broad definition of water plants includes all plants that grow rooted, submerged, or floating in water. They are further subdivided into deep-water aquatics, surface- or free-floating plants, marginals, and bog or moisture-loving plants, depending on the depth of water they require.

Water plants are grown for their beauty and ornamental value, but when a wide range of plants are grown together, they also create a healthy ecosystem that maintains the quality of the water in a feature or pond. A balanced range of plants will regulate the levels of light, oxygen, and nutrients, helping keep the water clear.

Submerged plants like hornwort (*Ceratophyllum demersum*) are known as oxygenators. These purify the water by using up nutrients and excluding light, which prevents algal growth. Surface-floaters, such as water hyacinths (*Eichhornia crassipes*), also absorb dissolved nutrients. Deep-water plants, including water lilies (*Nymphaea)*, root at the bottom of ponds, while their flowers and leaves shade the surface, again helping prevent the growth of algae. The roots of marginal plants are submerged, but their top growth is visible above the water, providing shelter for fish, amphibians and other wildlife.



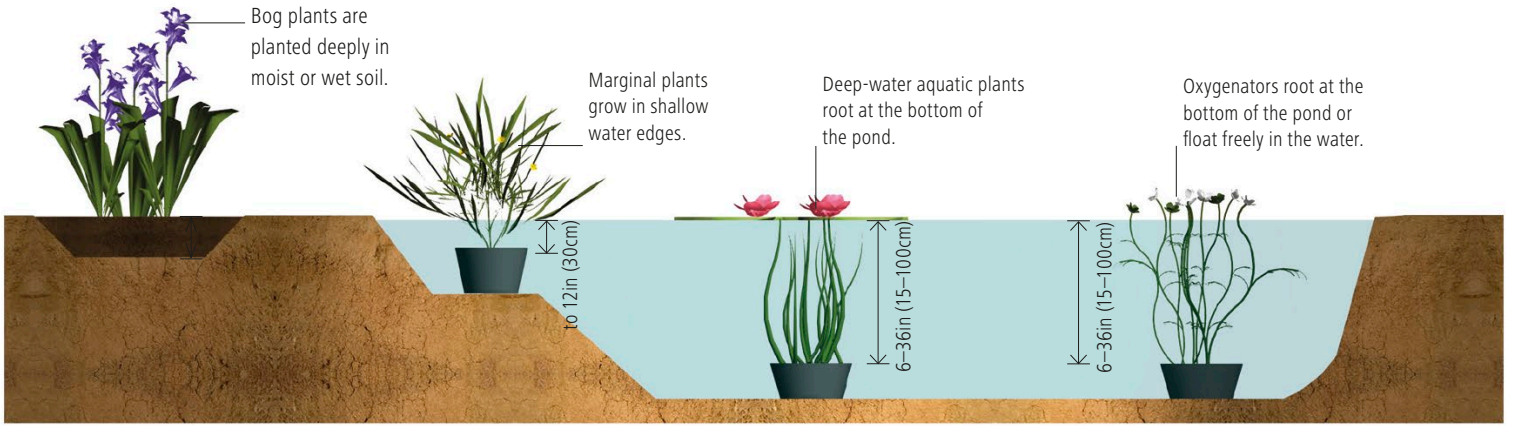
ABOVE Patio feature
Tiny but perfectly formed, this patio water feature, fringed by ferns, supports flowering irises and arum lilies. Flow from a pump helps oxygenate the water.

Ornamental planting

To maximize your pond's planting potential, create areas at varying depths to accommodate different types. Begin planting at the center of your pond, using deep-water plants, such as Cape pondweed (*Aponogeton distachyos*) with its white flowers that pop up at the surface, and the floating water soldier (*Stratiotes aloides*), which has spiky leaves; both require a depth of about 24–36in (60–90cm). (See box below for details on plant depths.) Most water lilies need to root at depths of 12–36in (30–100cm), depending on the species or cultivar. Dwarf water lilies, such as *Nymphaea tetragona*, or slender water irises (*Iris laevigata)* are good choices for

PLANTING DEPTHS

A pond with a range of planting depths allows you to grow a wide range of plants. Place plants at their appropriate depths, measured from the top of the soil in their containers to the water surface. Support young deep-water aquatics on bricks and lower them to their final depth as they grow. Fill the pond a few days before planting to allow the water to reach the air temperature and become populated with beneficial microorganisms.


Bog plants are planted deeply in moist or wet soil.
Marginal plants grow in shallow water edges.
Deep-water aquatic plants root at the bottom of the pond.
Oxygenators root at the bottom of the pond or float freely in the water.
to 12in (30cm)
6–36in (15–100cm)
6–36in (15–100cm)

a small pond or water feature. Marginal plants thrive in shallow water. Many are planted just below the surface, while water irises prefer a depth of about 6in (15cm), and pickerel weeds (*Pontederia*) like their roots submerged to a depth of 12in (30cm).

Marginals help disguise liners at the edges of ponds, create reflections, and provide wildlife cover. They have a range of habits, from the bog bean (*Menyanthes trifoliata*) with its clusters of white flowers in spring, to the flowering rush (*Butomus umbellatus*) with its umbels of small pink flowers, and the large, arum-like blooms of skunk cabbages (*Lysichiton*). Larger areas can be enhanced by bold clumps of cattails (*Typha latifolia),* while architectural plants, such as *Pontederia cordata*, provide focal points with their leaves and flower spikes.

The damp areas around the edges of a pond provide ideal conditions for bog natives and moisture-lovers. In very wet bogs, marginals will survive, but in drier conditions, opt for moisture-lovers. Bog gardens must have either drainage or water flowing through them to provide oxygen for the plant roots.

ABOVE Marginal planting
The curving edges of an informal pond offer ideal conditions for marginals such as *Pontederia cordata* and *Sagittaria latifolia*. Marginals disguise plastic liners and provide shelter for wildlife.

Designing with water plants

Every garden has space for a water feature and its associated plants, but try to match your plants to the size and design of your pond. Informal ponds are designed with sloping sides and boggy banks to attract amphibians, birds, and small mammals that prey on garden pests. In winter, water that is more than 24in (60cm) deep will help creatures to survive a long freeze. The great advantage of an informal pond is that it offers versatility: its sinuous margins are longer than straight-sided ponds of a similar size, and the sloping banks provide a range of planting depths, increasing your choice of plants.

In small gardens, avoid vigorously spreading plants, such as the flag iris (*Iris pseudacorus*) or *Glyceria maxima*. For architectural plants for bogs, try *Filipendula camtschatica* and *Miscanthus sacchariflorus*. Astilbes, trollius, primulas, and ferns provide color around the edges.

Seasonal care

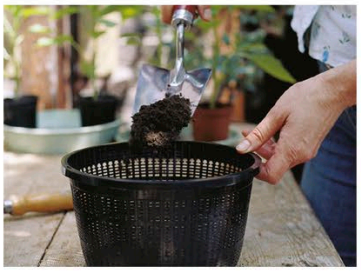
In fall, cut away dead foliage, trim overgrown plants, and remove weeds. It is also a good idea to place a net over ponds close to deciduous trees, as the fallen leaves can foul the water. Aim to reach a balance, so that rotting vegetation releases enough nutrition for next year's growth, but not so much as to encourage algae.

Water plants are best divided and repotted in spring as they start into growth. Keep planting baskets weeded, removing annual weed seedlings as they appear, as well as surplus water-plant seedlings. This task can be eased by deadheading the plants after flowering. Small ponds and water features will also need topping off in summer, using rainwater if possible.

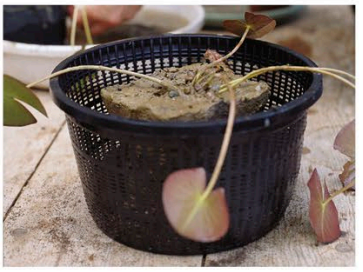
PLANTING UP A POND

Submerged plants are planted in baskets rather than pots, using aquatic potting mix. Garden soil is unsuitable because it often contains nutrients that encourage the growth of algae. When choosing plants, look for healthy specimens that are free of algae and pond weeds. All submerged plants, such as water lilies and oxygenators, can be planted in the same way. Lift them from the pond for dividing and repotting every 2 or 3 years.

Established water lily pond



1 Use a pond basket
Choose a pond basket with small holes to prevent soil from leaking out into the water. Place a layer of aquatic potting mix in the bottom.



2 Position the plant
Remove the plant from its pot and put it in the center of the basket at the same level. Fill around the plant with more potting mix, firming as you go.

3 Mulch with gravel
Clean any algae or duckweed from the plant's leaves and stems. Wash some pea gravel and apply a thin layer to stabilize the soil's surface.

Menyanthes trifoliata (Bog bean)
Deciduous, perennial, marginal water plant with 3-parted, green leaves on floating, spreading stems. To control, cut off extremities and replant. Fringed, white flowers open from cerise buds in early spring. **H** 9in (23cm), **S** indefinite.

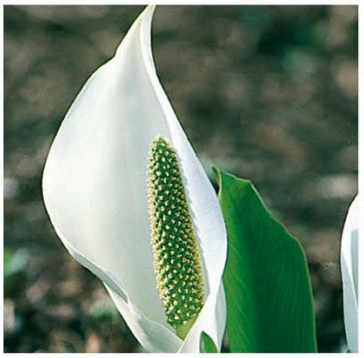
☼ ♦ Z4–8

Calla palustris (Bog arum)
Deciduous or semievergreen, perennial, spreading, marginal water plant with heart-shaped, glossy, mid- to dark green leaves. In spring, produces large, white spathes usually followed by red or orange fruits. **H** 10in (25cm), **S** 12in (30cm).

☼ ♦ Z4–8 ⓘ

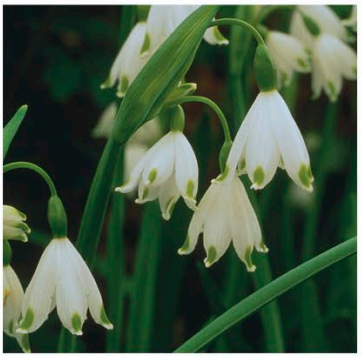
Sagittaria latifolia
(Broadleaf arrowhead, Duck potato, Wapato)
Deciduous, perennial, marginal water plant with curved, soft green leaves and sprays of white flowers in summer. Can be invasive, so confine it in a basket. **H** 5ft (1.5m), **S** 2ft (60cm).

☼ ♦ Z5–11



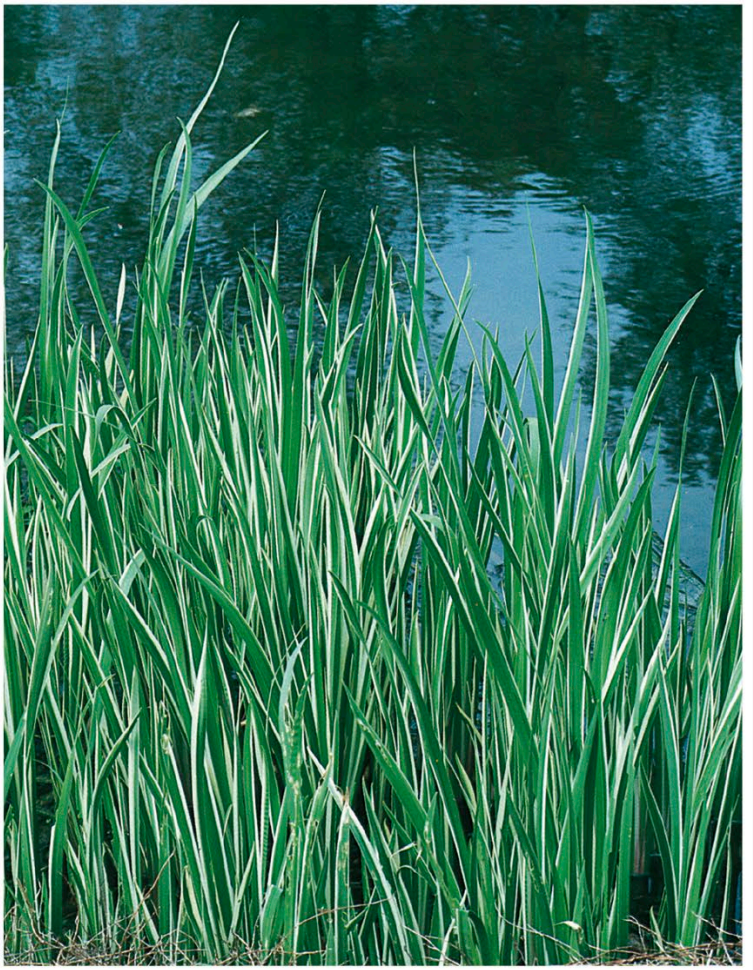
Lysichiton camtschatcensis
(White skunk cabbage)
Vigorous, deciduous, perennial, marginal water or bog plant. Pure white spathes, surrounding spikes of small, insignificant flowers, are borne in spring, before large, oblong to ovate, bright green leaves emerge. **H** 30in (75cm), **S** 24in (60cm).

☼ ♦ Z5–9 ⓘ



Leucojum aestivum **'Gravetye Giant'**
Robust, spring-flowering bulb, suitable for moist, boggy sites. Bears heads of pendent, long-stalked, bell-shaped, green-tipped, white flowers on leafless stems, above strap-shaped, semierect, basal leaves. **H** 36in (90cm), **S** 3in (8cm).

☼ ♦ Z4–8



Acorus calamus **'Argenteostriatus'**
Semievergreen, perennial, marginal water plant. Swordlike, tangerine-scented, mid-green leaves have cream variegation and are flushed rose-pink in spring. Increase by division in mid-spring. **H** 30in (75cm), **S** 24in (60cm).

☼ ♦ Z10–11

Astilboides tabularis
Deciduous, clump-forming perennial, bog plant with rounded, mid-green leaves, 3ft (1m) across. In midsummer, produces plumelike panicles of numerous, tiny, white flowers.
H 4ft (1.2m), **S** 5ft (1.5m).

☀ ◐ Z5–7

Hottonia palustris (Water violet)
Deciduous, perennial, submerged water plant. Dense whorls of much-divided, light green leaves form a spreading mass of foliage. Lilac or whitish flowers are produced above water surface in summer. Helps suppress algae. Increase by division. **S** indefinite.

☀ ● Z5–11

***Acorus gramineus* 'Variegatus'**
Semievergreen, perennial, marginal or submerged water plant. Narrow, stiff, grasslike leaves are dark green with cream variegation. Other cultivars with different colored foliage are available. Useful for patio ponds. **H** 10in (25cm), **S** 6in (15cm).

☀ ● Z10–11

Saururus cernuus (Lizard's tail)
Deciduous, perennial, marginal water or bog plant. Produces clumps of heart-shaped, mid-green leaves and racemes of creamy flowers in summer. Can become invasive; in small ponds and water features, keep it confined in a basket. **H** 9in (23cm), **S** 12in (30cm).

☀ ● Z5–10

Aponogeton distachyos
(Cape pondweed, Water hawthorn)
Deciduous, perennial, deep-water plant with floating, oblong, mid- to dark green leaves, often splashed with purple. Very fragrant, "forked," white flowers are borne throughout summer, often into winter. **S** 4ft (1.2m).

☀ ● Z9–10

Caltha leptosepala
Deciduous, perennial, marginal water plant with heart-shaped, dark green leaves and buttercup-like, white flowers produced in late spring and early summer. Increase by division in midspring. **H** and **S** 12in (30cm).

☀ ● Z5–8

Stratiotes aloides (Water soldier)
Semievergreen, perennial, submerged, free-floating water plant. Spiny, olive-green leaves are arranged in rosettes. Produces cup-shaped, white, sometimes pink-tinged flowers in summer. Increases by producing small water buds. **S** 12in (30cm).

☀ ● Z5–11

Aruncus dioicus (Goat's beard)
Hummock-forming perennial producing large leaves with lance-shaped leaflets on tall stems and above them, in midsummer, branching plumes of tiny, creamy-white flowers.
H 6ft (2m), **S** 4ft (1.2m).

☼ ◊ Z3–7

***Schoenoplectus lacustris* subsp. *tabernaemontani* 'Zebrinus'**
Evergreen, spreading, perennial sedge with leafless stems, striped horizontally with white, and brown spikelets in summer. Withstands brackish water. **H** 5ft (1.5m), **S** indefinite.

☼ ● Z6–9

Arundo donax* var. *versicolor
Herbaceous, rhizomatous, perennial grass with strong stems bearing broad, creamy-white-striped leaves. May produce dense, erect panicles of whitish-yellow spikelets in late summer.
H 8–10ft (2.5–3m), **S** 2ft (60cm).

☼ ◑ Z7–9

Glyceria maxima* var. *variegata
Herbaceous, spreading, perennial grass with cream-striped leaves, often tinged pink at the base. Bears open panicles of greenish spikelets in summer. **H** 30in (80cm), **S** indefinite.

☼ ◑ Z4–9

Filipendula ulmaria (Meadowsweet)
Deciduous, perennial, bog plant with plumelike spikes of creamy-white flowers in midsummer. Leafy stems bear divided, mid-green leaves. Self-seeds quite vigorously. **H** 3ft (1m), **S** 24in (60cm).

◐ ◑ Z5–9

Leucojum aestivum
(Summer snowflake)
Spring-flowering bulb with long, strap-shaped, semierect, basal leaves. Bears heads of pendent, long-stalked, bell-shaped, green-tipped, white flowers on leafless stems. **H** 18–36in (50–100cm), **S** 4–5in (10–12cm).

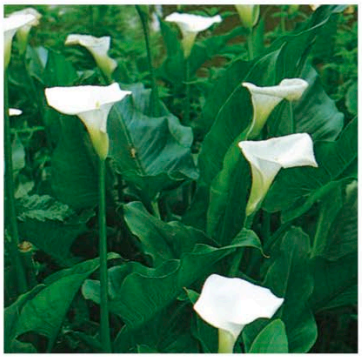
◐ ◑ Z3–9

Rodgersia podophylla
Clump-forming, rhizomatous perennial with large, many-veined leaves that are bronze when young and later become mid-green, then copper-tinted. Panicles of creamy-white flowers are borne well above foliage in summer. **H** 4ft (1.2m), **S** 3ft (1m).

☼ ◑ Z5–8

***Trollius* x *cultorum* 'Alabaster'**
Clump-forming perennial producing rounded, yellowish-white flowers in spring. These emerge from a basal mass of rounded, deeply divided, mid-green leaves. **H** 24in (60cm), **S** 18in (45cm).

☼ ◑ Z5–8



***Zantedeschia aethiopica* 'Crowborough'**
Early to mid-summer-flowering tuber with arrow-shaped, semierect, basal, deep green leaves. Produces a succession of arum-like, white spathes, each with a yellow spadix. **H** 1½–3ft (45–100cm), **S** 1–1½ft (35–45cm).

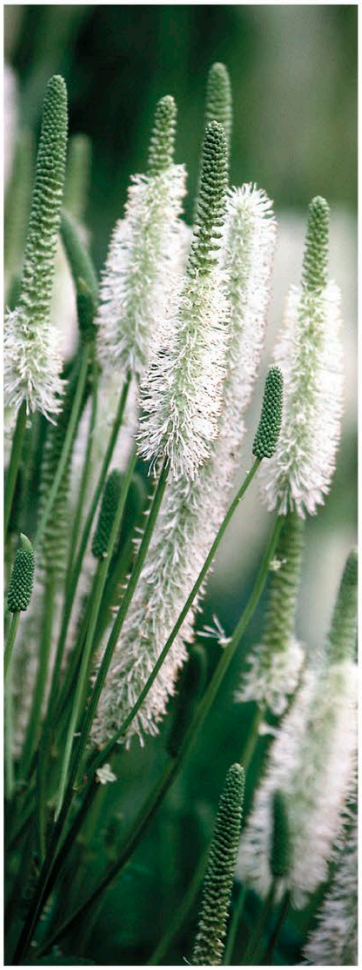
☼ ◊ Z8–10 ⓘ

Rhynchospora colorata
Slow-growing, deciduous, spreading, perennial, marginal water plant or bog plant with pointed, green-tipped, white bracts surrounding an inconspicuous flower head in late summer. Has linear, slightly hairy, mid-green leaves. **H** 18in (45cm), **S** indefinite.

☼ ◆ Z7–10

Rodgersia aesculifolia
Clump-forming, rhizomatous perennial that is excellent for a bog garden or pond margin. In midsummer, plumes of fragrant, pinkish-white flowers rise above crinkled, bronze foliage like that of a horse-chestnut tree. **H** and **S** 3ft (1m).

☼ ◆ Z5–8



Sanguisorba canadensis
(Canadian burnet)
Clump-forming perennial. In late summer, bears slightly pendent spikes of bottlebrush-like, white flowers on stems that arise from toothed, divided, mid-green leaves. **H** 4–6ft (1.2–2m), **S** 2ft (60cm).

☼ ◆ Z3–8

Rodgersia sambucifolia
Deciduous, clump-forming, perennial, bog plant with emerald-green leaves, sometimes bronze-tinged, divided into large, lobed leaflets. Bears broad spires of creamy-white flowers in summer. **H** 5ft (1.5m), **S** 3ft (1m).

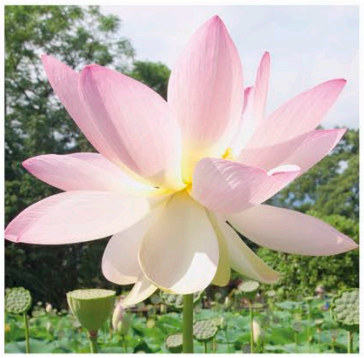
☼ ◆ Z5–8

Lysimachia clethroides
Vigorous, clump-forming, spreading perennial bearing spikes of small, white flowers above mid-green foliage in late summer. **H** 3ft (1m), **S** 2–3ft (60–100cm).

☼ ◆ Z4–9

Anemone rivularis
Perennial with stiff, free-branching stems bearing delicate, cup-shaped, white flowers in summer above deeply divided, dark green leaves. **H** 24in (60cm), **S** 12in (30cm).

◑ ◊ Z6–8 ⓘ

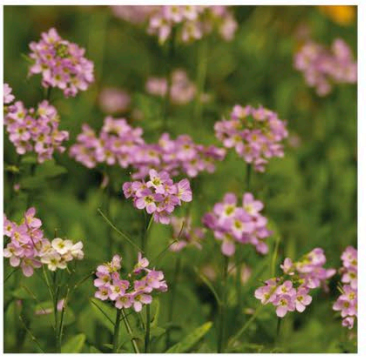


Nelumbo nucifera (Sacred lotus)
Vigorous, deciduous, perennial, marginal water plant. Sturdy stems bear very large, platelike, blue-green leaves and, in summer, large, vivid rose-pink flowers, maturing to flesh-pink. Grow under glass. **H** 3–5ft (1–1.5m) above water, **S** 4ft (1.2m). Min. 41°F (5°C).

☼ ♦ Z4–11

Darmera peltata (Umbrella plant)
Spreading perennial with large, rounded leaves. Bears clusters of white or pale pink flowers in spring on white-haired stems before foliage emerges. **H** 3–4ft (1–1.2m), **S** 2ft (60cm).

☼ ◑ Z5–9

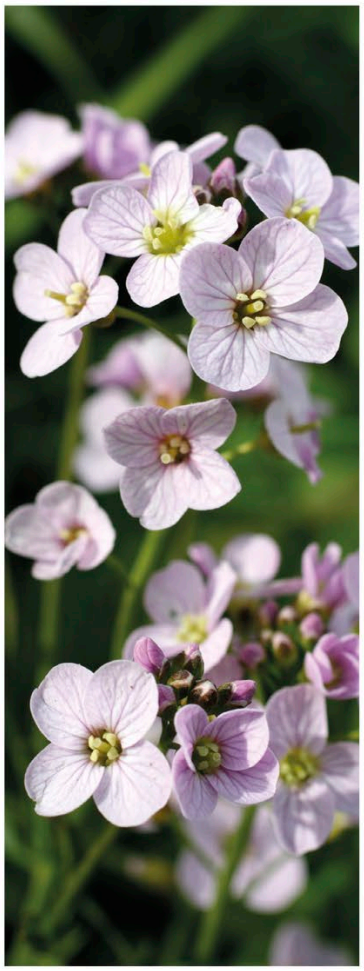


Cardamine raphanifolia
Deciduous, almost evergreen, perennial, bog plant with panicles of dark lilac flowers in late spring. Mid-green leaves are divided into ovate to rounded leaflets. Self-seeds readily. **H** 20in (50cm), **S** 8in (20cm).

◐ ◑ Z3–9

Butomus umbellatus (Flowering rush)
Deciduous, perennial, rushlike, marginal water plant with narrow, twisted, mid-green leaves and umbels of pink to rose-red flowers in summer. **H** 3ft (1m), **S** 18in (45cm).

☼ ♦ Z3–11



Cardamine pratensis (Lady's smock)
Deciduous, clump-forming, perennial, marginal water plant or bog plant with dense panicles of single or double, lilac or white flowers in spring. Has rosettes of glossy, dark green leaves divided into rounded leaflets. **H** 18in (45cm), **S** 6in (15cm).

◐ ◑ Z5–8

Filipendula rubra (Queen of the prairie)
Vigorous, upright perennial with large, jagged leaves and feathery plumes of tiny, soft pink flowers on tall, branching stems in midsummer. Will rapidly colonize a boggy site. **H** 6–8ft (2–2.5m), **S** 4ft (1.2m).

◐ ♦ Z3–9

Chelone obliqua (Turtlehead)
Upright perennial that bears terminal spikes of hooded, lilac-pink flowers in late summer and fall. Leaves are dark green and lance-shaped. **H** 3ft (1m), **S** 20in (50cm).

◐ ◑ Z3–9

Liatris spicata (Blazing star)
Clump-forming perennial. In late summer, bears spikes of crowded, rose-purple flower heads on stiff stems that arise from basal tufts of grassy, mid-green foliage. **H** 24in (60cm), **S** 12in (30cm).

☼ ◑ Z4–9

***Rheum palmatum* 'Atrosanguineum'**
Clump-forming perennial with very large, lobed, deeply cut leaves that are deep red-purple when young. Bears large, fluffy panicles of crimson flowers in early summer. **H** and **S** 6ft (2m).

☼ ◊ Z5–9 ⓘ

Lobelia cardinalis (Cardinal flower)
Deciduous, perennial, bog plant with narrowly lance-shaped, fresh green leaves. Produces spires of 2-lipped, brilliant scarlet flowers in summer. **H** 30in (75cm), **S** 9in (23cm).

☼ ◖ Z2–8 ⓘ

***Astilbe* 'Fanal'**
Leafy perennial with strong stems. In summer, bears neat, tapering, feathery panicles of tiny, crimson-red flowers that turn brown and keep their shape in winter. Broad leaves are divided into leaflets. Prefers humus-rich soil. **H** 24in (60cm), **S** to 36in (90cm).

◐ ◖ Z3–8

Geum coccineum
Clump-forming perennial with irregularly lobed leaves, above which rise slender, branching, hairy stems bearing single, orange flowers with prominent, yellow stamens in summer. **H** and **S** 12in (30cm).

☼ ◊ Z5–8

Iris fulva
Rhizomatous, beardless iris. In late spring or summer, produces a slender, slightly branched stem with 4–6 (occasionally more) copper- or orange-red flowers, 2–3in (5–7cm) across, with 2 flowers per leaf axil. **H** 18–32in (45–80cm), **S** indefinite.

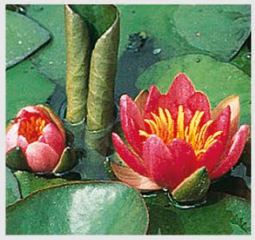
◐ ◖ Z6–9 ⓘ

Sarracenia purpurea
(Common pitcher plant, Huntsman's cup)
Evergreen, erect to semiprostrate, rosette-forming perennial. Inflated, green pitchers are tinged purple-red. In spring, bears 5-petaled, purple flowers. **H** 12in (30cm), **S** 12–16in (30–40cm). Min. 41°F (5°C).

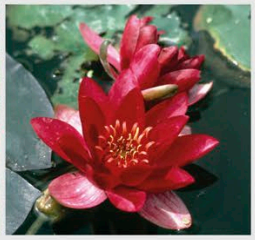
◐ ◖ Z2–9

WATER LILIES

These beautiful plants are often the focal point in a pond or water feature, be it naturalistic or formal. The leaves and flowers float on the surface, helping control algae and providing cover for fish and wildlife. There are nearly 400 species and selections available, with flower colors in shades of white, yellow, pink and red. Blue water lilies are not hardy in frost-prone climates. Water lilies vary in size, and include miniature types that spread up to 24in (60cm) in diameter and need a water depth of just 8in (20cm); medium lilies, ranging from 3–5ft (1–1.5m); and large types that extend 5–12ft (1.5–4m) or more—these require a water depth of 24in (60cm) or more. All water lilies thrive in full sun and must be grown in still water. For more details, see the Plant Dictionary.



***N.* 'Froebelii'**
[medium]



***N.* 'Laydekeri Fulgens'**
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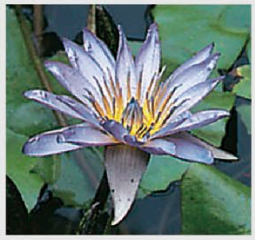
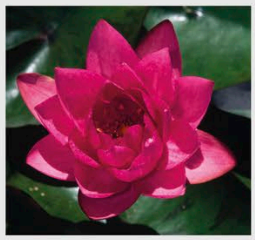
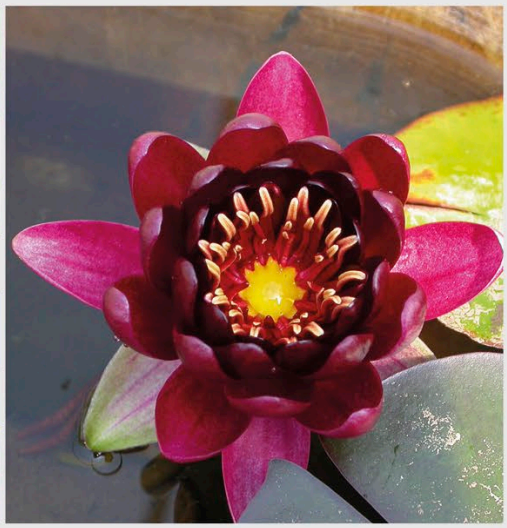


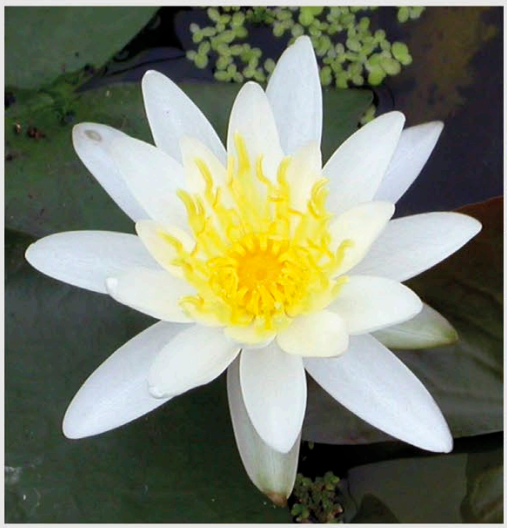
***N.* 'Blue Beauty'**
[large]



***N.* 'James Brydon'**
[medium]

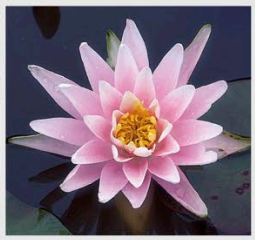


***N.* 'Black Princess'** [medium]

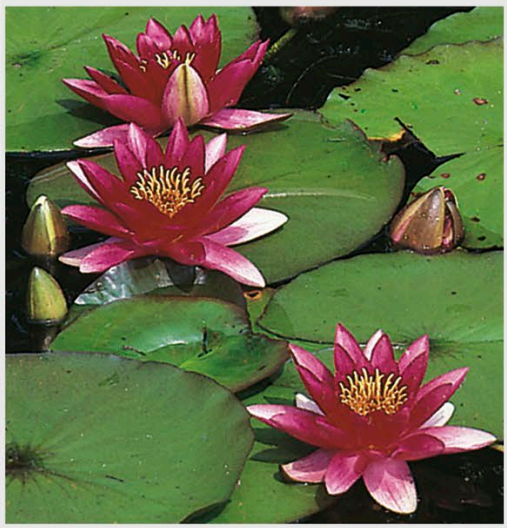


N. odorata* var. *minor
[medium]

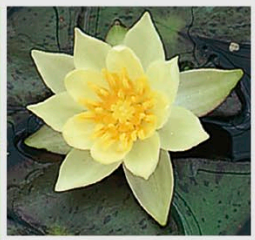
***N.* 'Aurora'**
[medium]



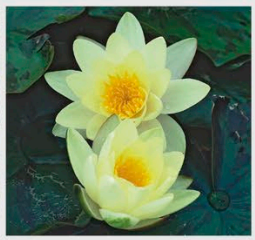
***N.* 'Rose Arey'**
[medium]



***N.* 'Attraction'**
[medium]



***N.* 'Pygmaea Helvola'**
[miniature]



***N.* 'Marliacea Chromatella'**
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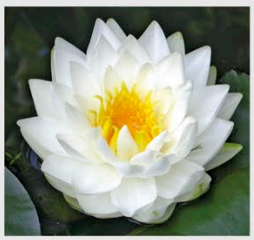
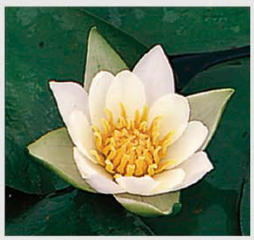
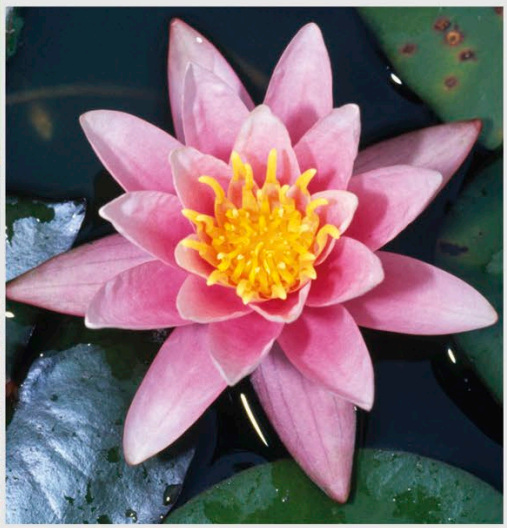


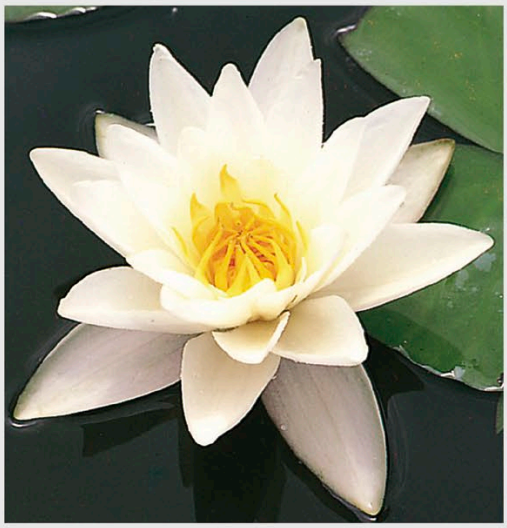
***N.* 'Gonnère'**
[medium]



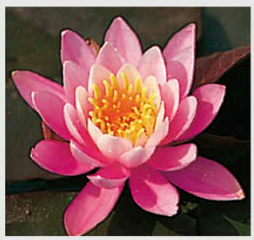
N. tetragona
[miniature]



***N.* 'Pink Sensation'** [medium]



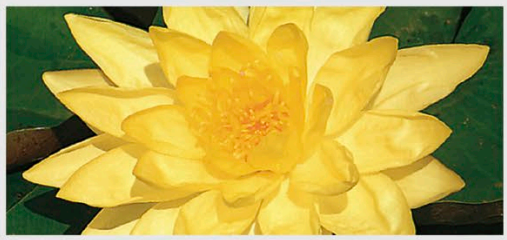
***N.* 'Marliacea Albida'** [medium]



***N.* 'Fire Crest'**
[medium]

***N.* 'Lucida'**
[medium]

***N.* 'Escarboucle'** [medium]



***N.* 'Odorata Sulphurea Grandiflora'** [medium]

Mimulus ringens
Deciduous, perennial, marginal water plant or bog plant with snapdragon-like, mauve-blue flowers borne in the leaf axils on tall stems from early to mid-summer. Has lance-shaped to narrowly oblong, toothed, mid-green leaves. **H** 24in (60cm), **S** 6in (15cm).

☼ ♦ Z4–9

***Myosotis scorpioides* 'Mermaid'**
(Water forget-me-not)
Deciduous, perennial, marginal water plant for mud or very shallow water. Narrow, mid-green leaves form spreading mounds. Bears small, blue, forget-me-not flowers during summer. **H** 6in (15cm), **S** 12in (30cm).

☼ ♦ Z5–9

Iris ensata (Japanese iris)
Rhizomatous, beardless Japanese iris. Branched stem produces 3–15 purple or red-purple flowers, 3–6in (8–15cm) across, with a yellow blaze on each fall, from early to midsummer. Many garden forms, including doubles and bicolors. **H** 24–36in (60–90cm), **S** indefinite.

◐ ♦ Z3–9 !

Iris setosa (Bristle-pointed iris)
Rhizomatous, beardless iris, very variable in stature. Bears 2–13 deep blue or purple-blue flowers, 2–3in (5–8cm) across, from each spathe in late spring and early summer. Falls have paler blue or white marks; each standard is reduced to a bristle. **H** 4–36in (10–90cm), **S** indefinite.

◐ ♦ Z3–8 !

Iris sibirica (Siberian iris)
Rhizomatous, beardless Siberian iris. From late spring to early summer, a branched stem bears 2 or 3 dark-veined, blue or blue-purple flowers, 2–4in (5–10cm) across, from each spathe. **H** 20–48in (50–120cm), **S** indefinite.

◐ ♦ Z3–8 !

Pontederia cordata (Pickerel weed)
Deciduous, perennial, marginal water plant. In late summer, dense spikes of blue flowers are produced between lance-shaped, glossy, dark green leaves. **H** 30in (75cm), **S** 18in (45cm).

☼ ♦ Z3–11

Lobelia siphilitica
(Blue cardinal flower)
Clump-forming perennial with narrowly ovate, green leaves. Racemes of 2-lipped, blue flowers are produced in late summer and fall. **H** 3ft (1m), **S** 9in (23cm).

☼ ◑ Z4–8

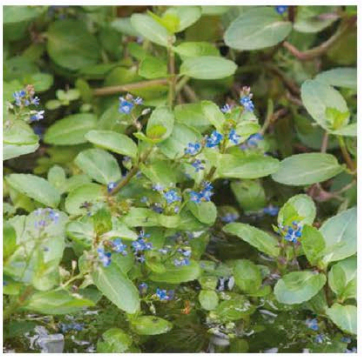
BLUE

Iris versicolor (Blue flag, Wild iris)
Robust, rhizomatous, beardless iris. Branched stem produces 3–5 or more purple-blue, reddish-purple, lavender or slate-purple flowers, 2–4in (5–10cm) across, from early to mid-summer. Falls usually have a central white area veined purple. **H** 8–32in (20–80cm).

☀◐ Z3–9 ⓘ

Salvia uliginosa (Bog sage)
Graceful, upright, branching perennial with oblong to lance-shaped, deeply toothed, mid-green leaves. From late summer to midfall, bears short, terminal racemes of clear blue flowers, ¾in (2cm) long. **H** 6ft (2m), **S** 18in (45cm).

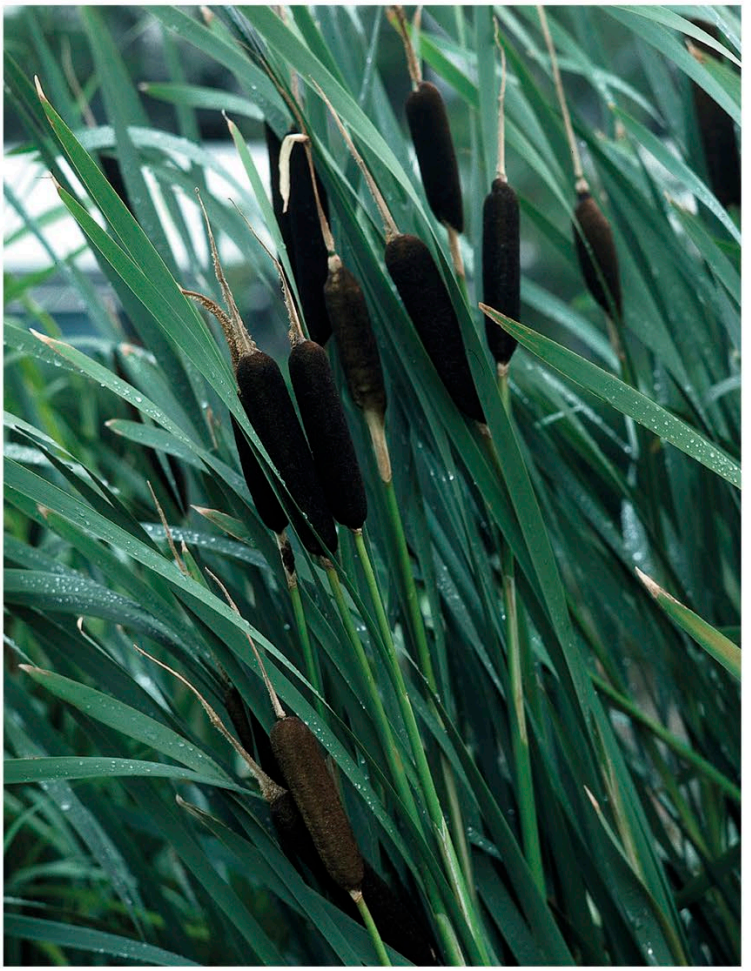
☀ Z6–10



Veronica beccabunga (Brooklime)
Usually evergreen, marginal water plant with creeping, hollow, fleshy stems and rounded, mid-green leaves. Bears blue flowers with white centers from late spring to late summer. Grow in wet soil or water to 5in (12cm) deep. Invasive. **H** 4in (10cm), **S** indefinite.

☀ Z5–11

GREEN



Typha latifolia (Cattail)
Deciduous, perennial, marginal water plant with large clumps of mid-green foliage. Produces spikes of beige flowers in late summer, followed by decorative, dark brown seed heads. Invasive. Smaller species available. **H** to 8ft (2.5m), **S** 2ft (60cm).

☀ Z2–12

Potamogeton crispus
(Curled pondweed)
Deciduous, perennial, submerged water plant that produces spreading colonies of seaweedlike, bronze- or mid-green foliage. Insignificant flowers are borne in summer. Prefers cool water. Helps keep water clear. **S** indefinite.

☀ Z7–11

Myriophyllum verticillatum
(Whorled water milfoil)
Deciduous, perennial, spreading, submerged water plant, overwintering by club-shaped winter buds. Slender stems are covered with whorls of finely divided, olive-green leaves. An excellent water conditioner. **S** indefinite.

☀ Z3–11

Typha minima
Deciduous, perennial, marginal water plant with grasslike leaves. Spikes of rust-brown flowers in late summer are followed by decorative, black, cylindrical seed heads. Confine in a basket to keep under control. **H** 18–24in (45–60cm), **S** 12in (30cm).

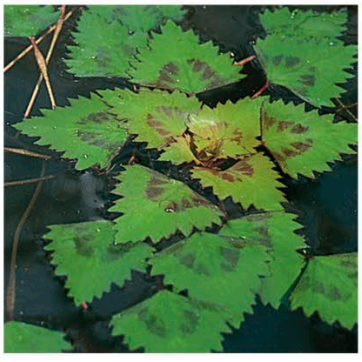
☼ 💧Z3–11

Gunnera manicata of gardens
Architectural perennial with rounded, prickly-edged leaves, to 5ft (1.5m) across. Bears conical, light green flower spikes in early summer, followed by orange-brown seed pods. Needs mulch cover for crowns in winter and a sheltered site. **H** 6ft (2m), **S** 7ft (2.2m).

☼ 💧Z7–10

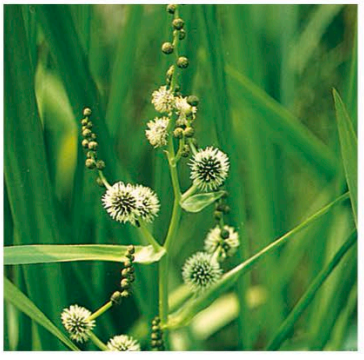
Matteuccia struthiopteris
(Ostrich fern)
Deciduous, rhizomatous fern. Lance-shaped, erect, divided fronds are arranged like a shuttlecock; outermost, fresh green, sterile fronds surround denser, dark brown, fertile fronds. **H** 3ft (1m), **S** 18in (45cm).

◐ 💧Z2–8



Trapa natans (Water chestnut)
Annual, floating water plant with diamond-shaped, mid-green leaves, often marked purple, arranged in rosettes. Bears white flowers in summer. In cooler climates it will not survive the winter. Replace annually. **S** 9in (23cm).

☼ 💧Z14–15

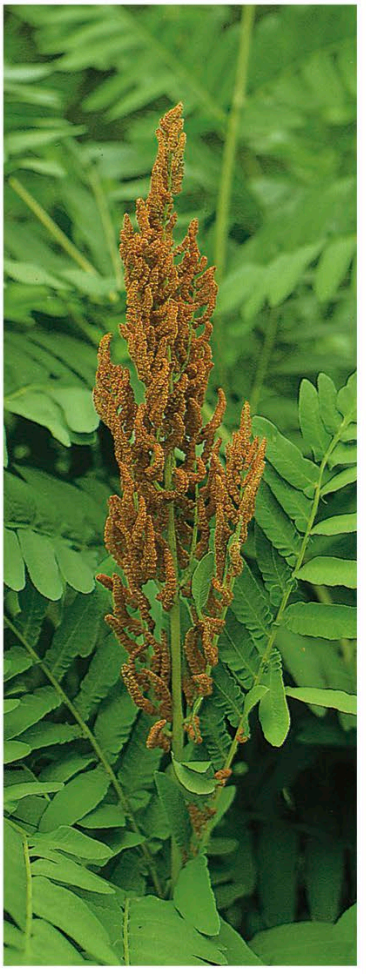


Sparganium erectum
(Branched bur reed)
Vigorous, deciduous or semievergreen, perennial, marginal water plant with narrow, mid-green leaves. Bears small, greenish-brown burs in summer. In small to medium ponds, control in a basket. **H** 3ft (1m), **S** 2ft (60cm).

☼ 💧Z4–8

Peltandra virginica
Deciduous, perennial, marginal water plant with arrow- to spear-shaped, glossy, dark green leaves, 10in (25cm) long. Produces an inconspicuous, green spathe with a paler green spadix in late summer. **H** and **S** 24in (60cm).

◐ 💧Z5–9



Osmunda regalis (Royal fern)
Deciduous fern with elegant, broadly ovate to oblong, divided, bright green fronds, pinkish when young. Mature plants bear tassel-like, rust-brown fertile flower spikes at ends of taller fronds. **H** 6ft (2m), **S** 3ft (1m).

◐ 💧Z2–10

***Houttuynia cordata* 'Chameleon'**
Vigorous, deciduous, perennial, groundcover, marginal water plant. Aromatic, leathery leaves are splashed yellow and red. Bears small sprays of white flowers in summer. Needs some sun to enhance variegation. Potentially invasive. **H** 4in (10cm), **S** indefinite.

☼ ☾ Z5–11

Lysichiton americanus
(Yellow skunk cabbage)
Vigorous, deciduous, perennial, marginal water or bog plant. Produces bright yellow spathes in spring, before large, fresh green leaves develop. Avoid planting near streams; spreads rapidly. **H** 3ft (1m), **S** 2.5ft (75cm).

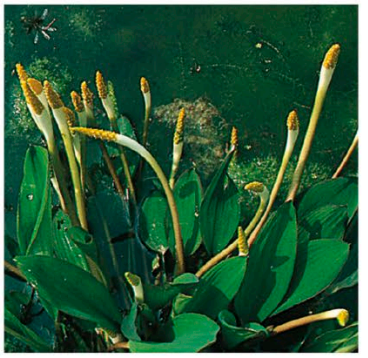
☼ ☾ Z7–9 ⓘ

Ranunculus lingua
Deciduous, perennial, marginal water plant with sturdy stems and lance-shaped, glaucous leaves. Clusters of yellow flowers are borne in late spring. Increase by division in March. Spreads rapidly. Confine to a basket in smaller ponds. **H** 3ft (90cm), **S** 18in (45cm).

☼ ☾ Z5–9 ⓘ

Caltha palustris
(Marsh marigold)
Deciduous, perennial, marginal water plant that has rounded, dark green leaves and bears clusters of cup-shaped, bright golden-yellow flowers in spring. There are several varieties available. **H** 24in (60cm), **S** 18in (45cm).

☼ ☾ Z3–7

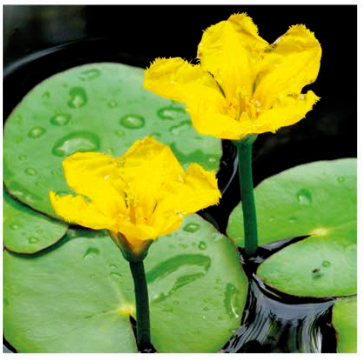


Orontium aquaticum (Golden club)
Deciduous, perennial, deep-water plant or, less suitably, marginal water plant. In spring, pencil-like, gold-and-white flower spikes emerge from floating, oblong, blue-gray or blue-green leaves. Needs a large basket. Increase by division or seed. **S** 24in (60cm).

☼ ☾ Z6–10

***Caltha palustris* 'Flore Pleno'**
Deciduous, perennial, marginal water plant with rounded, dark green leaves. Bears clusters of double, bright golden-yellow flowers in spring. Increase by division in March. **H** and **S** 10in (25cm).

☼ ☾ Z3–7



Nymphoides peltata (Water fringe)
Deciduous, perennial, deep-water plant with floating, small, round, mid-green leaves, often spotted and splashed with brown. Produces small, fringed, yellow flowers throughout summer. In smaller ponds, keep under control in a basket. **S** 24in (60cm).

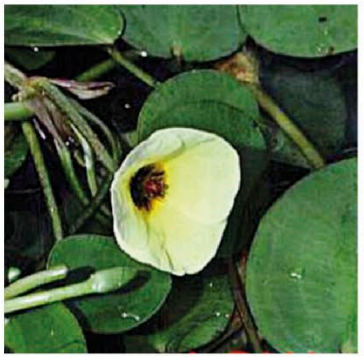
☼ ☾ Z6–11

Nuphar lutea (Yellow water lily)
Vigorous, deciduous, perennial, deep-water plant for a large pool. Mid-green leaves are leathery. Small, sickly-smelling, bottle-shaped, yellow flowers open in summer, followed by decorative seed heads. Increase by division in early spring. **S** 5ft (1.5m).

☼ ☾ Z3–9

Primula prolifera
Rosette-forming, evergreen, Candelabra primula producing fragrant, bell-shaped, pale to golden yellow, occasionally dull violet, flowers in summer. Spoon- to diamond-shaped leaves are toothed and deep green. **H** and **S** 24in (60cm).

☀ ◑ ◆ Z4–8



Hydrocleys x nymphoides
(Water poppy)
Deciduous, perennial, deep-water plant, evergreen in tropical conditions. In summer, poppylike, yellow flowers with yellow centers, 2–3in (5–8cm) across, are held above the floating, ovate, mid-green leaves. **S** to 24in (60cm). Min. 34ºF (1ºC).

☀ ◑ ◆ Z9–11

Iris pseudacorus* var. *bastardii
Deciduous, perennial, marginal water plant or bog plant bearing single, pale lemon-yellow flowers in late spring and early summer. Leaves are broadly linear, ridged, and mid-green. **H** 3ft (1m), **S** 24in (60cm).

☀ ◆ Z5–8 ⓘ

***Ligularia dentata* 'Britt Marie Crawford'**
Clump-forming perennial with heart-shaped, dark purple leaves and stems. In midsummer, produces sturdy racemes of large, daisylike, orange flower heads. **H** 5ft (1.5m), **S** 3ft (1m).

☀ ◑ ◆ Z4–8

Ligularia przewalskii
Loosely clump-forming perennial with stems clothed in deeply cut, round, dark green leaves. Narrow spires of small, daisylike, yellow flower heads are produced from mid- to late summer.
H 4–6ft (1.2–2m), **S** 3ft (1m).

☀ ◑ ◆ Z4–8

Primula florindae (Giant cowslip)
Bold, rosette-forming perennial with broadly lance-shaped, toothed, mid-green leaves. In summer, produces large heads of pendent, bell-shaped, scented, sulfur-yellow flowers.
H 4ft (1.2m), **S** 3ft (1m).

☀ ◑ ◆ Z3–8

***Carex elata* 'Aurea'**
(Bowles' golden sedge)
Evergreen, tuft-forming, perennial sedge with golden-yellow leaves. Solid, triangular stems bear dark brown flower spikes in summer.
H to 16in (40cm), **S** 6in (15cm).

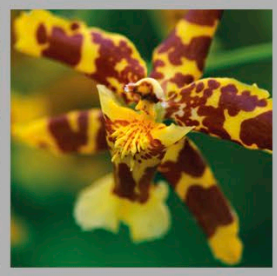
☀ ◆ Z5–9

Sarracenia flava
(Yellow pitcher plant)
Erect perennial with red-marked, yellow-green pitchers (modified leaves) that have hooded tops. From late spring to early summer, bears nodding, yellow or greenish-yellow flowers.
H and **S** 18in (45cm).

☀ ◆ Z7–10

Trollius europaeus (Globeflower)
Clump-forming perennial that in spring bears rounded, lemon- to mid-yellow flowers above deeply divided, mid-green leaves.
H 24in (60cm), **S** 18in (45cm).

☀ ◑ ◆ Z5–8



TENDER AND EXOTIC PLANTS

Tropical and subtropical regions are home to a huge range of plants, each thriving in varying growing conditions. If you live in these areas, you can grow tender plants outside and create dramatic planting schemes with architectural forms and exotic flowers. In temperate regions, either grow these exotic plants under glass or indoors as houseplants. There is a wealth of form, color, and texture available, from plants with handsome foliage to those with beautiful blooms, including bougainvilleas and peace lilies. Unlike those grown outside, indoor plants are not subject to seasonal extremes, and many need relatively little attention, apart from watering, feeding, and annual repotting.

TENDER AND EXOTIC PLANTS

Gardeners have long been fascinated by tender and exotic plants that bring color and interest from all corners of the world. In warmer regions, many of these can be grown in the garden; in cooler areas, they're best treated as houseplants, at least for part of the year.

What are tender and exotic plants?

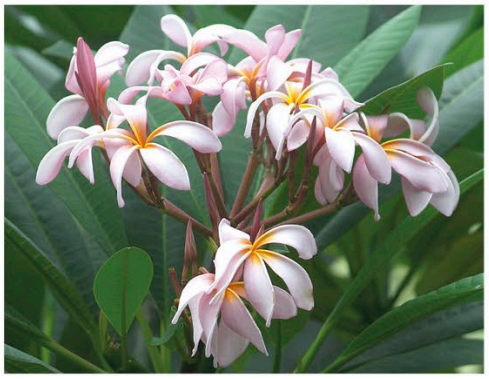
This group of plants originates from many parts of the world, including tropical and subtropical areas, where they require temperatures no lower than 34–64°F (1–18°C), even in winter. Their specific cultural demands vary between plants and can be complex. In addition to warmth, many also require high light levels, long growing seasons, and often either very arid or humid growing conditions. A small number, including cacti and succulents, can tolerate frost if kept dry, but most cannot.

Where the climate allows, tender and exotic plants can be grown in the garden; where it doesn't, they must be grown indoors. The most tender plants require permanent protection and are commonly grown as houseplants, including flamingo flower (*Anthurium andraeanum*), peace lily (*Spathiphyllum wallisii*), and Madagascar jasmine (*Stephanotis floribunda*). Other plants are more robust and can spend the summer in sheltered positions in the garden, being brought back in before the first frosts. These include *Banksia coccinea*, the Australian heath (*Epacris impressa*), and king protea (*Protea cynaroides*).

Designing with tender plants

The range of tender and exotic plants is vast, and includes many with bold flowers, attractive foliage, or an architectural habit. With such a diverse variety to grow, they are ideal for many different situations and planting styles. In areas where they can be grown outdoors all year, they can form the mainstay of beds and borders, even entire gardens, from jungle schemes to desert-style borders. In cooler areas, where they can only spend the warm summer months outside, they can still play a prominent role. Pot-grown plants such as *Agave americana*, *Ensete ventricosum*, and even the bird of paradise, *Strelitzia reginae*, for example, will all give a dramatic but temporary display in the garden, or on a patio or roof terrace.

Indoors, tender and exotic plants can be put to many uses, from statement plants in grand reception rooms, and year-round greenery in conservatory planters, to lone windowsill potted plants for seasonal color.



ABOVE Exotic flowers for indoors
Frangipani (*Plumeria rubra*) is famed for its rich scent and must be grown permanently in a large heated conservatory, where it can become very large. It needs a minimum winter temperature of 50°F (10°C).

ABOVE Conservatory climber
Bougainvillea is a vigorous, shrubby climber in warmer climates. It needs a minimum temperature of 45°F (7°C), and must be treated as a large conservatory plant in cooler areas.

BELOW Dramatic foliage
The Japanese sago palm (*Cycas revoluta*) is one of many tender shrubs that can be enjoyed indoors during winter, but can be kept outside for summer. It is grown for its sculptural foliage and habit.

LEFT In a natural setting
In their native hot, dry climates, cacti and other succulents can achieve spectacular dimensions. Even in cooler temperate gardens, they can still make a bold impression but must be brought in for the winter, and repositioned outside again each summer.

When choosing and positioning tender plants indoors, consider the conditions they require. Light levels may be poor, even near windows, and air-conditioning and central heating can create a dry atmosphere, which many plants dislike. Another consideration is how large the plants will become; many exotic plants commonly grown as house-plants, such as the Swiss-cheese plant (*Monstera deliciosa*), and *Bougainvillea,* occupy considerable space over time, although they can be pruned and trained.

Caring for tender plants

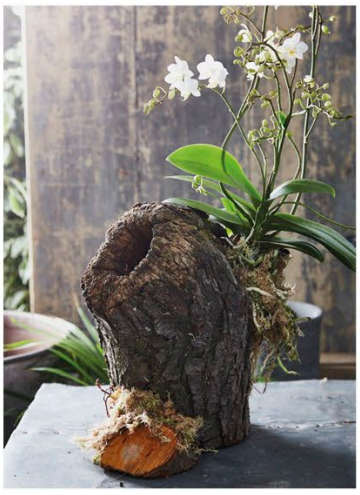
All tender and exotic plants, like any other garden plant, have their preferred growing conditions, so consider your site, soil, and aspect carefully when planting outdoors. This is even more important when growing them indoors, as the plants are reliant on you for their care. The best approach is to try and mirror their natural conditions as closely as possible, providing the same degree of heat, light, shade, humidity, and ventilation. It is also very important to observe their natural growing seasons by feeding and watering them more frequently when they're in growth and less so, if at all, when they are dormant.

Heated conservatories and greenhouses provide the best indoor habitat for most tender plants, although many also thrive in houses. The care they require depends on the plant, but as a guide, position sun-loving plants nearer the windows, shade-lovers farther away, and maintain high humidity levels by standing your plants on trays of moist gravel and misting them regularly. Some plants, such as moth orchids (*Phalaenopsis*), require good light but not direct sunlight. This can be achieved by positioning them on a north-facing window, or on a shelf close to a bright window. Also watch out for pests, which can flourish in the favorable conditions you provide.

Finding areas that provide optimal growing conditions for houseplants indoors can difficult, so it is worth making best use of them where they occur. A good approach is to plant "community planters" and grow plants that enjoy similar conditions together in a single container. This is ideal for sun-loving cacti, as well as epiphytic orchids and bromeliads that need high humidity and insectivorous plants that prefer very moist soil.

MAKING AN ORCHID DISPLAY

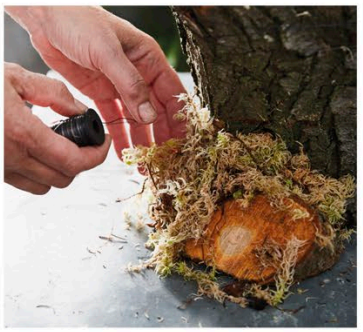
Orchids, such as *Phalaenopsis* Allegria gx, require particular conditions to perform at their best. Where you have a suitable spot indoors, take full advantage of it and create an attractive orchid display. Mounting an orchid on decorative wood can be beneficial to your orchid's health. It mimics how the orchid would grow naturally and allows for good ventilation to the roots and good drainage, which will help your plant thrive and prevent disease.



The completed display

1 Remove the orchid from its pot and tease the potting medium from its roots. Pack sphagnum moss evenly in and around the roots, leaving some outer roots partially exposed. Gently secure in place with a little wire.

2 Position the orchid on the wood with the plant's crown angled downward. Wrap wire around the base and roots of the orchid to secure it to the wood (but not too tightly). When the plant is secure, twist the ends of the wire together and cut away the excess.



3 Decorate the rest of the piece of wood with additional handfuls of moss, secured with wire. Place in a humid area and mist daily. When in full growth, water 3 times a week by submerging the entire mount in a deep bowl for 20 minutes until saturated.

WHITE

Syzygium paniculatum
(Australian brush cherry)
Evergreen tree with glossy leaves, coppery when young. Bears creamy-white flowers, with reddish sepals, and fragrant, rose-purple fruits. **H** 30ft (10m) or more, **S** 10–30ft (3–10m). Min. 50°F (10°C).

☼ 💧Z10–11

***Ficus elastica* 'Doescheri'**
(Rubber plant)
Strong-growing, evergreen, upright then spreading tree with oblong to ovate, leathery, lustrous, deep green leaves, patterned with gray-green, yellow and white. **H** 100–200ft (30–60m), **S** 70–200ft (20–60m). Min. 59°F (15°C).

☼ 💧Z11 ⓘ

Agonis flexuosa
(Peppermint tree, Willow myrtle)
Evergreen, weeping tree. Aromatic, lance-shaped, leathery leaves are bronze-red when young. In spring–summer, mature trees bear masses of small, white flowers. **H** 20–40ft (6–12m), **S** 15–30ft (5–10m). Min. 50ºF (10ºC).

☼ 💧Z10

***Ficus benjamina* 'Variegata'**
Evergreen, dense, round-headed, weeping tree, often with aerial roots. Has slender, pointed, lustrous leaves that are rich green with white variegation. **H** 100ft (30m) or more, **S** 50ft (15m) or more. Min. 50°F (10°C).

☼ 💧Z10–11 ⓘ

PINK

Dombeya* x *cayeuxii (Pink snowball)
Evergreen, bushy tree with rounded, toothed, hairy leaves to 8in (20cm) long. Pink flowers appear in pendent, ball-like clusters in winter or spring. **H** 10–15ft (3–5m), **S** 6–10ft (2–3m). Min. 50–55ºF (10–13ºC).

☼ 💧Z9–11

Chorisia speciosa (Floss silk tree)
Fast-growing, deciduous tree, the trunk and branches studded with thick, conical thorns. Pink to burgundy flowers are produced as indented, light green leaves fall. **H** 50ft (15m), **S** 5ft (1.5m). Min. 59°F (15°C).

☼ 💧Z9–11

Bauhinia variegata
Deciduous, rounded tree with broadly ovate, deeply notched leaves. Fragrant, magenta to lavender flowers, to 4in (10cm) across, are borne in winter–spring, sometimes later. **H** 25–40ft (8–12m), **S** 10–25ft (3–8m). Min. 45ºF (7ºC).

☼ 💧Z9–11

RED

Metrosideros excelsa
(New Zealand fire tree)
Evergreen, wide-spreading tree. Ovate, gray-green leaves are white felted beneath. Bears showy tufts of crimson stamens in winter. **H** to 70ft (20m), **S** 30–70ft (10–20m).

☼ 💧Z11

Brachychiton acerifolius
(Illawarra flame tree)
Deciduous tree with clusters of bright scarlet flowers in late winter, spring, or summer before 3–7-lobed, lustrous leaves develop. **H** 50–120ft (15–35m), **S** 25–40ft (8–12m). Min. 50°F (10°C).

☼ 💧 pH Z9–10

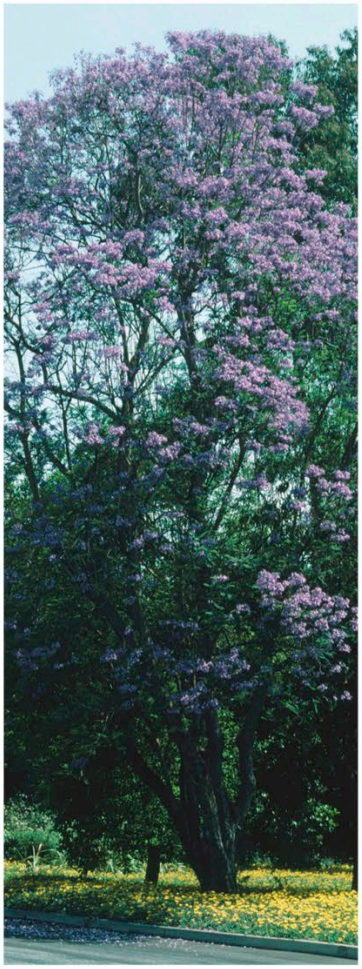
Grevillea banksii
Evergreen, loosely branched tree or tall shrub. Divided leaves have 5–11 slender leaflets, silky-downy beneath. Bears dense heads of spiderlike, red (sometimes pink or creamy white) flowers intermittently throughout the year. **H** 3–30ft (1–10m), **S** 6–15ft (2–5m).

☼ 💧 pH Z10–11 ⓘ

PURPLE

***Cordyline australis* 'Atropurpurea'**
Slow-growing, evergreen tree with purple to purplish-green leaves. Produces terminal sprays of white flowers in summer and small, globular, white fruits in fall. **H** 10–30ft (3–10m), **S** 3–12ft (1–4m).

☼ 💧Z10–11



Jacaranda mimosifolia
Fast-growing, deciduous, rounded tree with fernlike leaves of many tiny, bright green leaflets. Bears trusses of vivid blue to blue-purple flowers in spring and early summer. **H** 50ft (15m), **S** 22–30ft (7–10m). Min. 41–45°F (5–7°C).

☼ 💧Z9–11

SILVER

Leucadendron argenteum (Silver tree)
Evergreen, conical to columnar tree, spreading with age. Leaves are covered with long, silky, white hairs. Produces insignificant flowers set in silvery bracts in fall–winter. **H** 20–30ft (6–10m), **S** 6–12ft (2–4m). Min. 45°F (7°C).

☼ 💧Z10–11

Dracaena draco (Dragon tree)
Slow-growing, evergreen tree with a wide-branched head. Has stiff, lance-shaped, gray- or blue-green leaves. Mature trees bear clusters of orange fruits from mid- to late summer. **H** 10–30ft (3–10m) or more, **S** 6–25ft (2–8m) or more. Min. 50°F (10°C).

☼ 💧Z11

GREEN

Firmiana simplex
(Chinese parasol tree)
Robust, deciduous tree with large, lobed leaves, small, showy, lemon-yellow flowers and papery, leaflike fruits. **H** 50ft (15m), **S** 30ft (10m). Min. 36°F (2°C).

☼ 💧Z7–11

Meryta sinclairii (Puka)
Evergreen, round-headed tree with large, glossy, deep green leaves. Greenish flowers are produced sporadically in spring to fall, followed by berrylike, black fruits. **H** 39ft (10m), **S** 15ft (5m). Min. 41°F (5°C).

☼ 💧Z10–11

Livistona chinensis (Chinese fan palm, Chinese fountain palm)
Slow-growing, evergreen palm with a stout trunk. Has fan-shaped, glossy leaves, 3–10ft (1–3m) across. Mature trees bear loose clusters of berrylike, black fruits in fall. **H** 40ft (12m), **S** 15ft (5m). Min. 37–41°F (3–5°C).

☼ 💧Z11

Beaucarnea recurvata
(Elephant's foot, Pony-tail)
Slow-growing, evergreen tree or shrub with a sparsely branched stem. Recurving leaves, 3ft (1m) long, persist after turning brown. **H** 12–25ft (4–8m), **S** 6–12ft (2–4m). Min. 45°F (7°C).

☼ 💧Z9–11

Corynocarpus laevigatus
Evergreen, upright tree, spreading with age. Has leathery leaves and clusters of small, greenish flowers in spring–summer. Plumlike, orange fruits are produced in winter. **H** 30–50ft (10–15m), **S** 6–15ft (2–5m).

☼ 💧Z11

Washingtonia robusta (Thread palm)
Fast-growing, evergreen palm with large, fan-shaped leaves and, in summer, tiny, creamy-white flowers in large, long-stalked sprays. Black berries are produced in winter–spring. **H** 80ft (25m), **S** 8–15ft (2.5–5m). Min. 50°F (10°C).

☼ 💧Z13–15

GREEN

***Dracaena marginata* 'Tricolor'**
Slow-growing, evergreen, upright tree or shrub with narrow, strap-shaped, cream-striped, dark green leaves, with prominent red margins. **H** 6–15ft (2–5m), **S** 3–10ft (1–3m). Min. 55ºF (13ºC).

☼ ◊Z11

Cyathea australis
(Australian tree fern)
Evergreen, upright tree fern with a robust, almost black trunk. Pinnate, dark green leaves, 6–12ft (2–4m) long, have lance-shaped or linear segments and shiny brown scales. **H** 3–10ft (1–3m), **S** 10–15ft (3–5m).

☼ ◊Z10–11

Ficus benghalensis (Banyan)
Evergreen, wide-spreading tree with trunklike prop roots. Has ovate, leathery leaves, rich green with pale veins, to 8in (20cm) long, and small, figlike, red fruits. **H** 70–100ft (20–30m), **S** 700ft (200m). Min. 59–64°F (15–18°C).

☼ ◊Z10–11 ⓘ

YELLOW

Tecoma stans
(Yellow bells, Yellow elder)
Evergreen, rounded, upright tree or large shrub. Leaves have 5–13 leaflets. Produces racemes or panicles of funnel-shaped, yellow flowers from spring to fall. **H** 15–28ft (5–9m), **S** 10–15ft (3–5m). Min. 45–50ºF (7–10ºC).

☼ ◊Z11–15

Archontophoenix alexandrae
(Alexandra palm, Northern bungalow palm)
Evergreen palm with pinnate, arching leaves, 6–12ft (2–4m) long. Mature trees bear panicles of small, white or cream flowers, followed by almost spherical, pinkish-red fruits. **H** 80ft (25m), **S** 15–22ft (5–7m). Min. 59°F (15°C).

☼ ◊Z10–11

Ficus lyrata (Banjo fig, Fiddle-leaf fig)
Evergreen, open tree with leathery, glossy, fiddle-shaped, dark green leaves, 1ft (30cm) or more long. Almost spherical figs, ripening green with white dots, are borne only on mature trees in the open. **H** 70–100ft (20–30m) or more, **S** to 30–70ft (10–20m). Min. 59°F (15ºC).

☼ ◊Z10–12 ⓘ

Dypsis lutescens
(Golden-feather palm, Yellow palm)
Evergreen, suckering palm, forming clumps of robust, canelike stems. Has long, arching leaves of slender, yellowish-green leaflets. **H** 28ft (9m), **S** 20ft (6m). Min. 61ºF (16ºC).

☼ ◊Z14–15

Tabebuia chrysantha
(Golden trumpet tree)
Deciduous, round-headed tree with dark green leaves, divided into 3–5 ovate leaflets, and panicles of rich yellow flowers, 1–3in (2.5–8cm) long, borne in early spring. **H** 80ft (25m), **S** 60ft (18m). Min. 50–59ºF (10–15ºC).

☼ ◊Z14–15

ORANGE

Plumeria rubra (Frangipani)
Deciduous, spreading tree or large shrub, sparingly branched. Bears fragrant, salverform, yellow-eyed, rose-pink, sometimes yellow or red to bronze flowers, 1¼–1½in (3–4cm) across, from summer–fall. **H** 22ft (7m), **S** 15ft (5m). Min. 55ºF (13ºC).

☼ 💧Z10–12 ⓘ

Spathodea campanulata
(African tulip tree, Flame-of-the-forest)
Evergreen, showy tree. Leaves have 9–19 deep green leaflets. Clusters of tulip-shaped, scarlet or orange-red flowers are produced intermittently. **H** 60–80ft (18–25m), **S** 30–60ft (10–18m). Min. 55–59°F (13–15°C).

☼ 💧Z13–14

WHITE

Chamelaucium uncinatum [white]
(Geraldton waxflower)
Evergreen, wiry-stemmed, spreading shrub. Each needlelike leaf has a tiny, hooked tip. Flowers ranging from deep rose-purple to pink, lavender, or white appear in late winter or spring. **H** 6–15ft (2–5m), **S** 6–12ft (2–4m). Min. 41ºF (5ºC).

☼ 💧 pH Z9–12

Azorina vidalii
Evergreen shrub with erect stems. Has spoon-shaped, toothed, glossy green leaves, 2–6in (5–15cm) long. Racemes of bell-shaped, white or pink flowers are borne in spring and summer. **H** and **S** 16–24in (40–60cm). Min. 41ºF (5ºC).

☼ 💧Z8–11

Westringia fruticosa
(Australian rosemary)
Evergreen, rounded, compact shrub. Crowded leaves, in whorls of 4, are white-felted beneath. White to palest blue flowers are produced from spring–summer. **H** and **S** 3–5ft (1–1.5m). Min. 41–45ºF (5–7ºC).

☼ 💧Z13–15

Eriogonum arborescens
Evergreen, sparingly branched shrub. Small leaves have recurved edges and woolly, white undersides. Leafy umbels of small, white or pink flowers are borne from spring to fall. **H** and **S** 2–5ft (60cm–150cm). Min. 41ºF (5ºC).

☼ 💧Z7–10

Sparrmannia africana (African hemp)
Evergreen, erect shrub or small tree. Has large, shallowly lobed leaves and clusters of white flowers, with yellow and red-purple stamens, in late spring and summer. **H** 10–20ft (3–6m), **S** 6–12ft (2–4m). Min. 45ºF (7ºC).

☼ 💧Z12–15

Acokanthera oblongifolia
(Wintersweet)
Evergreen, rounded shrub. Produces fragrant, white or pinkish flowers in late winter and spring and poisonous, black fruits in fall. **H** 10–20ft (3–6m), **S** 5–12ft (1.5–4m). Min. 50ºF (10ºC).

☼ 💧Z10–11 ⓘ

Carissa macrocarpa **'Tuttlei'**
Evergreen, compact and spreading shrub with thorny stems and leathery leaves. Bears fragrant, white flowers in spring–summer and edible, plumlike, red fruits in fall. **H** 6–10ft (2–3m) or more, **S** 10ft (3m) or more.

◐ 💧Z9–11 ⓘ

Gardenia thunbergia (White gardenia)
Evergreen, bushy shrub or small tree with rigid branches. Has elliptic, glossy, deep green leaves with wavy margins. Fragrant, 7–9-petaled, white flowers, 2½–4in (6–10cm) across, are borne from winter–spring. **H** 6–15ft (2–5m), **S** 5ft (1.5m). Min. 45ºF (7ºC).

☼ 💧Z10–12

Calliandra eriophylla (Fairy duster)
Evergreen, stiff, dense shrub. Leaves have numerous tiny leaflets. From late spring to fall, bears pompons of tiny, pink-anthered, white florets, followed by brown seed pods. **H** 3ft (1m), **S** 32in (80cm). Min. 55ºF (13ºC).

☼ 💧Z9–10

WHITE

***Pandanus tectorius* 'Veitchii'**
(Veitch's screw pine)
Evergreen, upright, arching shrub with rosettes of long, light green leaves that have spiny, white to cream margins.
H 10–20ft (3–6m), **S** 6–12ft (2–4m).
Min. 55°F (13°C).

☼ 💧 Z10–12

***Gardenia jasminoides* 'Veitchiana'**
Fairly slow-growing, evergreen, upright shrub with ovate, glossy green leaves up to 4in (10cm) long and fragrant, double, white flowers from summer to winter.
H 6–40ft (2–12m), **S** 3–10ft (1–3m).
Min. 50°F (10°C).

☼ 💧 pH Z8–11

***Hibiscus syriacus* 'Diana'**
Deciduous, upright shrub with ovate, lobed, deep green leaves and very large, trumpet-shaped, pure white flowers, with wavy-edged petals, from late summer to mid-fall.
H 10ft (3m), **S** 6ft (2m).

☼ 💧 Z5–8

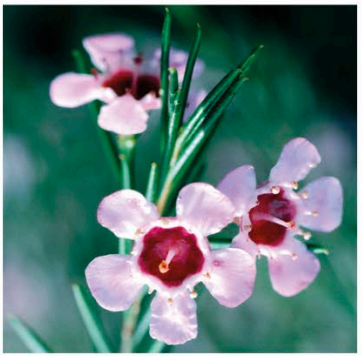
PINK

Myoporum parvifolium
Evergreen, spreading to prostrate shrub with semisucculent leaves. In summer, bears clusters of small, honey-scented flowers, white or pink with purple spots, followed by tiny, purple fruits in fall.
H 2ft (60cm), **S** 2–3ft (60–90cm).
Min. 36–41°F (2–5°C).

☼ 💧 Z11

***Plectranthus fructicosus* 'James'**
Evergreen, erect, shrub. Purple stems bear broadly elliptic to ovate, coarsely toothed, fleshy, purple-veined, mid-green leaves. Bears terminal panicles of tubular pink flowers, with darker spots, to 1ft (30cm) long, in late summer. **H** and **S** 5ft (1.5m). Min. 41°F (5°C).

☼ 💧 Z9–10



***Chamelaucium uncinatum* 'Bundara Excelsior'** (Geraldton waxflower)
Evergreen, wiry-stemmed, bushy shrub. Each needlelike leaf has a tiny, hooked tip. Flowers ranging from deep rose-purple to pink, lavender, or white are borne in late winter or spring. **H** 6–15ft (2–5m), **S** 6–12ft (2–4m). Min. 41°F (5°C).

☼ 💧 pH Z9–11

Protea cynaroides (King protea)
Evergreen, bushy, rounded shrub. Water lily-shaped flower heads, 5–8in (13–20cm) across, with silky-haired, petallike, pink to red bracts, are borne from spring–summer. Leaves are ovate and mid- to dark green. **H** and **S** 3–6ft (1–2m). Min. 41–45°F (5–7°C).

☼ 💧 pH Z9–12

Protea neriifolia
Evergreen, bushy, upright shrub with narrow leaves. Flower heads, about 5in (13cm) long, are red, pink, or white, the bracts tipped with tufts of black or white hair, and borne in spring-summer.
H and **S** 10ft (3m). Min. 41–45°F (5–7°C).

☼ 💧 pH Z11

Calliandra haematocephala
[pink form]
Evergreen, spreading shrub. Leaves have 16–24 narrowly ovate leaflets. Flower heads consist of many red-, pink-, or white-stamened florets from late fall to spring. **H** 10–20ft (3–6m), **S** 6–12ft (2–4m). Min. 55°F (13°C).

☼ 💧 Z9–11

Pimelea ferruginea
Evergreen, dense, rounded shrub with tiny, recurved, deep green leaves. Small, tubular, rich pink flowers are borne in dense heads in spring or early summer. **H** 3–6ft (1–2m), **S** 3–5ft (1–1.5m).
Min. 45°F (7°C).

☼ 💧 pH Z9–11

Chorizema ilicifolium
(Holly flame pea)
Evergreen, spreading or upright shrub, with spiny-toothed, leathery leaves. Has spikes of bicolored, orange and pinkish-red flowers in spring–summer.
H and **S** 3–10ft (1–3m). Min. 45°F (7°C).

☼ 💧 pH Z9–11

Nerium oleander (Rose bay)
Evergreen, upright, bushy shrub with leathery, deep green leaves. Clusters of salverform, pink, white, red, apricot, or yellow flowers are borne from spring to fall, often on dark red stalks. **H** 6–20ft (2–6m), **S** 3–10ft (1–3m).

☼ ◊ Z8–10 ⓘ

Hibiscus rosa-sinensis **'The President'**
Evergreen, bushy shrub with toothed, ovate, glossy, dark green leaves. In summer, bears large, magenta-centered, bright pink flowers with prominent, yellow anthers. **H** 8–15ft (2.5–5m), **S** 5–10ft (1.5–3m). Min. 59ºF (15ºC).

☼ ◊ Z9–11

Euphorbia pulcherrima
(Mexican flame leaf, Poinsettia)
Evergreen, sparingly branched shrub. Bears small, greenish-red flowers surrounded by bright red, pink, yellow, or white bracts from late fall to spring. **H** 6–12ft (2–4m), **S** 3–8ft (1–2.5m). Min. 59ºF (15ºC).

☼ ◊ Z9–11

Justicia carnea (King's crown)
Evergreen, sparingly branched shrub with velvety-haired leaves. Produces spikes of pink to rose-purple flowers from summer–fall. **H** 6ft (2m), **S** 3ft (1m). Min. 50–59ºF (10–15ºC).

☼ ◊ Z10–11

Justicia brandegeeana (Shrimp plant)
Evergreen, rounded shrub intermittently, but mainly in summer, producing white flowers surrounded by shrimp-pink bracts. **H** 3ft (1m), **S** 2–3ft (60–90cm). Min. 50–59ºF (10–15ºC).

☼ ◊ Z10–11

Medinilla magnifica
Evergreen, upright shrub, with sparingly produced, 4-angled, robust stems and boldly veined leaves. Pink to coral-red flowers hang in long trusses beneath large, pink bracts from spring–summer. **H** 3–6ft (1–2m), **S** 2–5ft (60cm–150cm). Min. 61–64ºF (16–18ºC).

☼ ◊ Z10–11

Epacris impressa
(Common Australian heath)
Evergreen, usually erect, fairly open, heathlike shrub with short, red-tipped leaves. Tubular, white, pink, or red flowers are borne in late winter and spring. **H** 2–4ft (30–120cm), **S** 1–3ft (30–90cm).

☼ ◊ pH Z11

Greyia sutherlandii
Evergreen, large shrub or small tree. Has rounded to heart-shaped, irregularly toothed, leathery, mid-green leaves. Old leaves often turn bright red before falling. In spring, bears spikes of small, bright red flowers with new foliage. **H** 6–15ft (2–5m), **S** 5–10ft (1.5–3m).

☼ ◊ Z9–11

RED

Nymania capensis
Evergreen, more or less rounded, rigidly branched shrub or small tree. In spring, bears flowers with upright, pink to rose-purple petals. Produces papery, inflated, red fruits in fall. **H** 6–10ft (2–3m) or more, **S** 3–6ft (1–2m). Min. 45–50°F (7–10°C).

☼ ◊ Z9–12

Euphorbia milii (Crown of thorns)
Fairly slow-growing, mainly evergreen, spiny, semisucculent shrub. Clusters of tiny, yellowish flowers, enclosed by 2 bright red bracts, open intermittently during the year. **H** 3ft (1m) or more, **S** 1½ft (45cm). Min. 54°F (12°C).

☼ ◊ Z11 ⓘ

Solanum betaceum (Tree tomato)
Evergreen, sparingly branched shrub or small tree, upright when young, with large, heart-shaped, rich green leaves. Produces edible, tomatolike, red fruits from summer to winter. **H** 6–10ft (2–3m), **S** 3–6ft (1–2m). Min. 50°F (10°C).

☼ ◊ Z11

Sutherlandia frutescens
Evergreen, upright shrub. Has leaves of 13–21 gray-haired, deep green leaflets; bright red flowers in late spring and summer are followed by pale green, later red-flushed, inflated seed pods. **H** 2–6ft (0.6–2m), **S** 3–5ft (1–1.5m).

☼ ◊ Z13–15

Bouvardia ternifolia
(Scarlet trompetilla)
Mainly evergreen, bushy, upright shrub with leaves in whorls of 3. Bears tubular, bright scarlet flowers from summer to early winter. **H** 2–3ft (60–90cm), **S** 1–2ft (30–60cm).

☼ ◊ Z8–11

Banksia coccinea
Evergreen, dense shrub with toothed, dark green leaves, gray-green beneath. Flower heads comprising clusters of bright red flowers with prominent styles and stigmas are produced in late winter and spring. **H** 12–25ft (4–8m), **S** 5–12ft (1.5–4m).

☼ ◊ Z9–12

Leucospermum reflexum
Evergreen, erect shrub with ascending branchlets. Has small, blue-gray or gray-green leaves. Slender, tubular, crimson flowers with long styles are carried in tight, rounded heads in spring–summer. **H** 10ft (3m), **S** 6–12ft (2–4m). Min. 50°F (10°C).

☼ ◊ Z9–12

Ixora coccinea
Evergreen, rounded shrub with glossy, dark green leaves to 4in (10cm) long. Small, tubular, red, pink, orange, or yellow flowers are borne in dense heads in summer. **H** 8ft (2.5m), **S** 5–6ft (1.5–2m). Min. 59°F (15°C).

☼ ◊ Z9–11

Boronia megastigma
Evergreen, well branched, wiry-stemmed shrub. Small leaves have 3–5 narrow leaflets. Fragrant, bowl-shaped, brownish-purple and yellow flowers hang from leaf axils in late winter and spring. **H** 3–10ft (1–3m), **S** 3–6ft (1–2m).

☼ ◊ pH Z9–12

Ardisia crenata
(Coralberry, Spiceberry)
Evergreen, upright, open shrub. Produces fragrant, star-shaped, white flowers in early summer, followed by long-lasting, bright red fruits. **H** to 6ft (2m), **S** 2ft (60cm).

◑ ◊ Z8–11

Acalypha wilkesiana
(Copperleaf, Jacob's coat)
Evergreen, bushy shrub. Ovate, serrated leaves are 4in (10cm) or more long, rich copper-green, variably splashed with shades of red. **H** 6ft (2m), **S** 3–6ft (1–2m). Min. 61°F (16°C).

◑ ◊ Z10–11 ⓘ

PURPLE

Prostanthera ovalifolia
Evergreen, bushy, rounded shrub with tiny, sweetly aromatic, ovate, thick-textured leaves. Cup-shaped, 2-lipped, purple flowers are borne in short, leafy racemes in spring–summer. **H** 8–12ft (2.5–4m), **S** 5–8ft (1.5–2.5m).

☼ ◊ Z9–11

Polygala* x *dalmaisiana
Evergreen, erect shrub with small, grayish-green leaves. White-veined, rich purple flowers are produced from late spring to fall. **H** and **S** 3–8ft (1–2.5m). Min. 45°F (7°C).

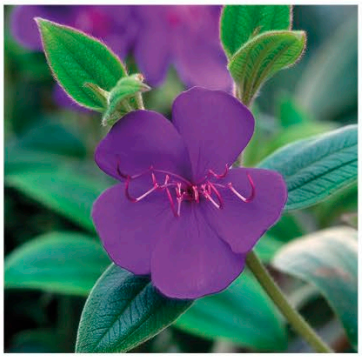
☼ ◊ Z9–11

***Dodonaea viscosa* 'Purpurea'**
Evergreen, bushy shrub or tree. Firm-textured leaves are flushed copper-purple. Produces clusters of small, reddish or purplish seed capsules in late summer or fall. Makes a good hedge in a windy site. **H** 3–15ft (1–5m), **S** 3–10ft (1–3m). Min. 41°F (5°C).

☼ ◊ Z9–11

Iochroma cyaneum
Evergreen, semiupright, slender-branched shrub. Tubular, deep purple-blue flowers, with flared mouths, are produced in dense clusters from late fall to early summer. **H** 10ft (3m), **S** 5–6ft (1.5–2m). Min. 41°F (5°C).

☼ ◊ Z8–11



Tibouchina urvilleana (Glory bush)
Evergreen, slender-branched shrub. Velvet-haired leaves are prominently veined. Bears satiny, blue-purple flowers in clusters from summer to early winter. **H** 10–20ft (3–6m), **S** 6–10ft (2–3m).

☼ ◊ pH Z13–15

***Brunfelsia pauciflora* 'Macrantha'**
Evergreen, spreading shrub with leathery leaves. Blue-purple flowers, aging to white in about 3 days, are produced from winter to summer. **H** 3–10ft (1–3m), **S** 2–5ft (0.6–1.5m). Min. 45°F (7°C).

◐ ◊ Z9–11 ⓘ

GREEN

Sabal minor (Dwarf palmetto)
Evergreen, suckering fan palm with stems mainly underground. Has fan-shaped leaves with 20–30 green or gray-green lobes. Erect sprays of small, white flowers are followed by shiny, black fruits. **H** 3–6ft (1–2m), **S** 10ft (3m). Min. 41°F (5°C).

☼ ◊ Z12–15

Coprosma repens
Evergreen, spreading, then erect shrub. Has broadly ovate, leathery, lustrous, rich green leaves. Insignificant flowers in late spring are followed on female plants by egg-shaped, orange-red fruits in late summer to fall. **H** and **S** to 6ft (2m).

◐ ◊ Z14–15

Portulacaria afra (Elephant bush)
Semievergreen, upright shrub with horizontal branches and tiny, fleshy, bright green leaves. Clusters of pale pink flowers are borne in late spring and summer. **H** 6–10ft (2–3m), **S** 5ft (1.5m). Min. 50°F (10°C).

☼ ◊ Z10–11

Cycas revoluta (Japanese sago palm)
Slow-growing, evergreen, palmlike plant that may produce several trunks. Leaves have spine-tipped leaflets with rolled margins. Bears tight clusters of ovoid, yellow fruits in fall. **H** and **S** 3–6ft (1–2m).

☼ ◊ Z9–10

Encephalartos ferox
Slow-growing, evergreen, palmlike plant, almost trunkless for many years. Feather-shaped leaves, 2–6ft (60–180cm) long, have many serrated and spine-tipped, leathery, grayish leaflets. **H** 3ft (1m), **S** 6–10ft (2–3m). Min. 50–55°F (10–13°C).

☼ ◊ Z9–11

Mimosa pudica
(Humble plant, Sensitive plant)
Short-lived, evergreen shrub with prickly stems; needs support. Lance-shaped, fernlike, leaves fold when touched. Has minute, light pink to lilac flowers in summer–fall. **H** 12–30in (30–75cm), **S** 16–36in (40–90cm). Min. 55°F (13°C).

◐ ◊ Z9–11

GREEN

Rhapis excelsa (Bamboo palm, Slender lady palm)
Evergreen fan palm, eventually forming clumps. Leaves are 8–12in (20–30cm) long, composed of 20 or more narrow, glossy, deep green lobes in fan formation. **H** and **S** 5–15ft (1.5–5m). Min. 50–55°F (10–13°C).

☼ ◊ Z9–11

Philodendron bipinnatifidum
Evergreen, unbranched shrub. Glossy leaves, to 2ft (60cm) or more long, are divided into many fingerlike lobes. Occasionally produces greenish-white spathes. **H** and **S** 15ft (5m).

☼ ◊ ⓘ Z9–11

Ficus deltoidea (Mistletoe fig)
Slow-growing, evergreen, bushy shrub with bright green leaves, red-brown-tinted beneath. Bears small, greenish-white fruits that mature to dull yellow. **H** 15–22ft (5–7m), **S** 3–10ft (1–3m). Min. 59°F (15°C).

☼ ◊ Z10–11 ⓘ

Polyscias filicifolia (Fern-leaf aralia)
Evergreen, erect, sparingly branched shrub. Leaves are 1ft (30cm) long and are divided into many small, serrated, bright green leaflets. **H** 6–8ft (2–2.5m), **S** 3ft (1m). Min. 61°F (16°C).

☼ ◊ Z11–12 ⓘ

***Polyscias guilfoylei* 'Victoriae'** (Lace aralia)
Slow-growing, evergreen, rounded shrub or small tree with leaves that are divided into several ovate to rounded, serrated, white-margined, deep green leaflets. **H** 5ft (1.5m), **S** 32in (80cm). Min. 61°F (16°C).

☼ ◊ Z11–12 ⓘ

Chamaedorea elegans
(Dwarf mountain palm, Parlor palm)
Evergreen, slender palm, suckering with age. Feather-shaped leaves, comprising many glossy leaflets, are 2–3ft (60–100cm) long. **H** 6–10ft (2–3m), **S** 3–6ft (1–2m). Min. 61°F (16°C).

☼ ◊ Z10–12

YELLOW

Citrus* x *microcarpa (Calamondin)
Evergreen, bushy shrub with leathery leaves. Intermittently bears tiny, fragrant flowers followed by orange-yellow fruits. **H** 10–20ft (3–6m), **S** 6–10ft (2–3m).

☼ ◊ Z13

Hibbertia cuneiformis
Evergreen, upright, bushy shrub with small, ovate leaves, serrated at tips. Bears small clusters of bright yellow flowers, with spreading petals, in spring–summer. **H** 3–6ft (1–2m), **S** 3–5ft (1–1.5m). Min. 41–45°F (5–7°C).

☼ ◊ Z9–11

Acacia pulchella
(Western prickly Moses)
Semievergreen or deciduous shrub of diffuse habit, with spiny twigs and rich green foliage. Tiny, deep yellow flowers are borne in dense, globular heads in spring. **H** 2–5ft (0.6–1.5m), **S** 3–6ft (1–2m).

☼ ◊ Z11

ORANGE

WHITE

Senna corymbosa
Vigorous, evergreen or semievergreen shrub. Leaves have 4–6 ovate, bright green leaflets; sprays of bowl-shaped, rich yellow flowers are borne in late summer. **H** 6–12ft (2–4m), **S** 5–10ft (1.5m–3m). Min. 41–45ºF (5–7ºC).

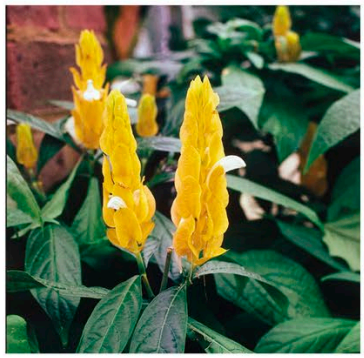
☼ ◊ Z12–15

Reinwardtia indica (Yellow flax)
Evergreen, upright subshrub, branching from the base. Has grayish-green leaves and small clusters of yellow flowers mainly in summer but also during the year. **H** and **S** 2–3ft (60–90cm). Min. 45ºF (7ºC).

☼ ◊ Z10–11

Senna didymobotrya
(Golden wonder)
Evergreen, rounded, sometimes spreading shrub with leaves comprising several leaflets. Spikes of rich yellow flowers open from glossy, blackish-brown buds throughout the year. **H** 8ft (2.5m), **S** 5–10ft (1.5–3m). Min. 55ºF (13ºC).

☼ ◊ Z14–15



Pachystachys lutea (Lollipop plant)
Evergreen, loose, more or less rounded shrub, often grown annually from cuttings. Has tubular, white flowers in tight, golden-bracted spikes in spring–summer. **H** 3ft (1m), **S** 18–30in (45–75cm). Min. 55°F (13°C).

◐ ◊ Z11

Crotalaria agatiflora
(Canary-bird bush)
Evergreen, loose, somewhat spreading shrub with gray-green leaves. Racemes of greenish-yellow flowers are borne in summer, and also intermittently during the year. **H** 6–10ft (2–3m), **S** 3–6ft (1–2m). Min. 45–50ºF (7–10ºC).

☼ ◊ Z9–11

Codiaeum variegatum* var. *pictum
(Croton)
Evergreen, erect, sparingly branched shrub. Leathery, glossy leaves vary greatly in size and shape, and are variegated with red, pink, orange, or yellow. **H** 3–6ft (1–2m), **S** 2–5ft (0.6–1.5m). Min. 50–55ºF (10–13ºC).

◐ ◖ Z11–12 ⓘ

Nematanthus gregarius
Evergreen, prostrate or slightly ascending shrub with fleshy, glossy leaves. Inflated, orange and yellow flowers are borne mainly from spring to fall. **H** 32in (80cm), **S** 3ft (90cm) or more. Min. 50–59ºF (10–15ºC).

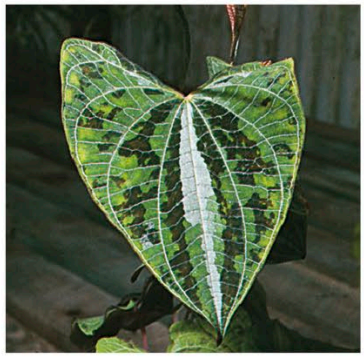
◐ ◖ Z10–11

Digitalis canariensis
Evergreen, rounded, sparingly branched shrub. Bears foxglovelike, yellow to red- or brownish-orange flowers in dense, upright spikes, to 1ft (30cm) tall, in summer. **H** 5ft (1.5m), **S** 3ft (1m). Min. 36ºF (2ºC).

☼ ◊ Z9–11

Pandorea jasminoides (Bower vine)
Evergreen, woody-stemmed, twining climber with leaves of 5–9 leaflets. Bears clusters of funnel-shaped, white flowers, with pink-flushed throats, from late winter to summer. **H** 15ft (5m). Min. 41ºF (5ºC).

☼ ◊ Z11



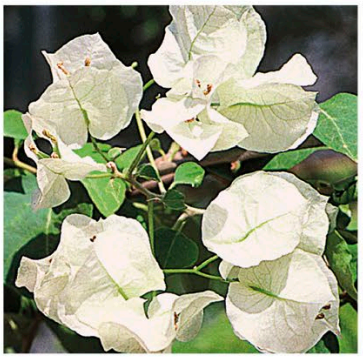
Dioscorea discolor
(Ornamental yam)
Evergreen, woody-stemmed, twining climber. Heart-shaped, olive-green leaves are 5–6in (12–15cm) long, marbled silver, paler green and brown, and are red beneath. **H** to 6ft (2m). Min. 41ºF (5ºC).

◐ ◊ Z11

Beaumontia grandiflora
(Herald's trumpet)
Vigorous, evergreen, woody-stemmed, twining climber with rich green leaves that are hairy beneath. Produces large, fragrant, white flowers from late spring to summer. **H** 25ft (8m). Min. 41ºF (5ºC).

☼ ◊ Z9–11

WHITE



***Bougainvillea glabra* 'Snow White'**
Vigorous, evergreen or semievergreen, woody-stemmed, scrambling climber with ovate leaves. In summer, bears clusters of white floral bracts with green veins. **H** to 15ft (5m).
Min. 45–50°F (7–10°C).

☼ 💧Z9–12

***Epipremnum aureum* 'Marble Queen'**
(Devil's ivy)
Fairly fast-growing, evergreen, woody-stemmed, root climber. Leaves are marbled with white. Less robust than the species. **H** 10–30ft (3–10m).
Min. 59–64°F (15–18°C).

☼ 💧Z9–11 ⓘ

Clerodendrum thomsoniae
Vigorous, evergreen, woody-stemmed, scandent shrub with ovate, rich green leaves. Flowers with crimson petals and bell-shaped, pure white calyces are produced in clusters in summer. **H** 10ft (3m) or more. Min. 50–55°F (10–13°C).

☼ 💧Z10–12

Hoya lanceolata* subsp. *bella
Evergreen, woody-stemmed, trailing shrub with narrowly ovate, pointed leaves. In summer, produces tiny, star-shaped, white flowers, with red centers, in pendulous, flattened clusters. **H** 1½ft (45cm). Min. 50°F (10°C).

☼ 💧Z11–12

Stephanotis floribunda
(Madagascar jasmine)
Moderately vigorous, evergreen, woody-stemmed, twining climber with leathery, glossy leaves. Scented, waxy, white flowers are borne in small clusters from spring to fall. **H** 15ft (5m) or more.
Min. 59°F (15°C).

☼ 💧Z14–15

***Syngonium podophyllum* 'Trileaf Wonder'**
Evergreen, woody-stemmed, root climber with tufted stems and arrow-head-shaped leaves when young. Mature leaves have 3 glossy leaflets with pale green or silvery-gray veins. **H** 6ft (2m) or more. Min. 59°F (15°C).

☼ 💧Z14–15 ⓘ

PINK

Lophospermum erubescens
Evergreen, soft-stemmed, scandent, perennial climber, sometimes woody-stemmed, often grown as an annual. Stems and leaves are downy. Rose-pink flowers, 2¾in (7cm) long, are borne in summer–fall. **H** to 10ft (3m) or more.
Min. 41°F (5°C).

☼ 💧Z9–11

Hoya carnosa (Wax plant)
Moderately vigorous, evergreen, woody-stemmed, twining, root climber. Scented, star-shaped flowers, white, fading to pink, with deep pink centers, are borne in dense trusses in summer–fall. **H** to 15ft (5m) or more.
Min. 41–45°F (5–7°C).

☼ 💧Z10–11

Mandevilla splendens
Evergreen, woody-stemmed, twining climber. Has lustrous leaves and produces trumpet-shaped, rose-pink flowers, with yellow centers, in late spring or early summer. **H** 10ft (3m).
Min. 50°F (10°C).

☼ 💧Z9–12 ⓘ

***Mandevilla* x *amabilis* 'Alice du Pont'**
Vigorous, evergreen, woody-stemmed, twining climber with ovate leaves. Bears large clusters of trumpet-shaped, pink flowers in summer. **H** 10ft (3m) or more. Min. 50ºF (10ºC).

☀ 💧 Z9–12 ⓘ

Distictis buccinatoria
(Mexican blood flower)
Vigorous, evergreen, woody-stemmed, tendril climber. Bears trumpet-shaped, rose-crimson flowers, orange-yellow within, from early spring to summer. **H** to 15ft (5m) or more. Min. 41ºF (5ºC).

☀ 💧 Z9–11

Clytostoma callistegioides
Fast-growing, evergreen, woody-stemmed, tendril climber. Each leaf has 2 ovate leaflets and a tendril. Small, nodding clusters of purple-veined, lavender flowers, fading to pale pink, are borne in spring–summer. **H** to 15ft (5m). Min. 45–50ºF (7–10ºC).

☀ 💧 Z9–11

Agapetes variegata* var. *macrantha
Evergreen or semievergreen, loose, scandent shrub that may be trained against supports. Has lance-shaped leaves and narrowly urn-shaped, white or pinkish-white flowers, patterned in red, in winter. **H** 3–6ft (1–2m). Min. 45–50ºF (7–10ºC).

☀ 💧 pH Z10–12

Tropaeolum tricolor
Herbaceous climber with delicate stems, small tubers, and 5–7-lobed leaves. Small, orange or yellow flowers with black-tipped, reddish-orange calyces are borne from early spring to early summer. **H** to 3ft (1m). Min. 41ºF (5ºC).

☀ 💧 Z12–15

Agapetes serpens
Evergreen, arching to pendulous, scandent shrub, best grown with support as a perennial climber. Has small, lance-shaped, lustrous leaves and bears pendent flowers, rose-red with darker veins, in spring. **H** 6–10ft (2–3m). Min. 41ºF (5ºC).

☀ 💧 pH Z9–10

RED

Kennedia rubicunda
(Dusky coral pea)
Fast-growing, evergreen, woody-stemmed, twining climber with leaves divided into 3 leaflets. Coral-red flowers are borne in small trusses in spring–summer. **H** to 10ft (3m). Min. 41–45ºF (5–7ºC).

☼ ◊ Z10–12

Combretum indicum (Rangoon creeper)
Fairly fast-growing, deciduous or semievergreen, scandent shrub, often grown as an annual. From late spring to late summer, bears fragrant flowers, varying from orange to red, sometimes pink. **H** 10–15ft (3–5m). Min. 55ºF (13ºC).

☼ ◊ Z10–11

Passiflora coccinea
(Red grenadilla)
Vigorous, evergreen, woody-stemmed, tendril climber with rounded, oblong leaves. Bears bright deep scarlet flowers, with red, pink, and white crowns, from spring to fall. **H** 10–12ft (3–4m). Min. 50–55ºF (10º–13ºC).

☼ ◊ Z10–12

PURPLE

Bougainvillea glabra **'Sanderiana'**
Vigorous, mainly evergreen, woody-stemmed, scrambling climber. Rounded-ovate, dark green leaves are edged with creamy-white. Bears many bright purple floral bracts in summer. **H** to 15ft (5m). Min. 45–50ºF (7–10ºC).

☼ ◊ Z9–11

Hardenbergia violacea
'Happy Wanderer'
Evergreen, woody-stemmed, twining climber. In spring, bears pendent panicles of deep mauve-purple flowers, with yellow marks on upper petals. **H** to 10ft (3m).

☼ ◊ Z10–12

Ipomoea indicia (Blue dawn flower)
Vigorous, perennial climber with evergreen, mid-green leaves. From late spring to fall, bears abundant, funnel-shaped, rich purple-blue to blue flowers, often maturing to purplish-red. **H** 20ft (6m) or more. Min. 45ºF (7ºC).

☼ ◊ ⓘ Z8–11

Aristolochia littoralis (Calico flower)
Fast-growing, evergreen, woody-stemmed, twining climber with heart-to kidney-shaped leaves. Heart-shaped flowers, 5in (12cm) across, maroon with white marbling, are borne in summer. **H** to 22ft (7m). Min. 45ºF (7ºC).

◑ ◊ Z9–12

Passiflora quadrangularis
(Giant grenadilla)
Strong-growing, evergreen, woody-stemmed climber with angled, winged stems. Bears white, pink, red, or pale violet flowers, the crowns banded white and deep purple, mainly in summer. **H** 15–25ft (5–8m). Min. 61ºF (16ºC).

☼ ◊ Z9–12

Bougainvillea glabra
Vigorous, evergreen or semievergreen, woody-stemmed, scrambling climber with rounded-ovate leaves. Clusters of floral bracts, in shades of cyclamen-purple, are produced in summer. **H** to 15ft (5m). Min. 45–50ºF (7–10ºC).

☼ ◊ Z9–11

Gynura aurantiaca (Velvet plant)
Evergreen, woody-based, soft-stemmed, semiscrambling climber or lax shrub, with purple-haired stems and leaves. Clusters of daisylike, orange-yellow flower heads are borne in winter. **H** 6–10ft (2–3m), less as a shrub. Min. 55ºF (13ºC).

◑ ◊ Z10–12

Solanum seaforthianum
(Italian jasmine, St. Vincent lilac)
Evergreen, scrambling climber with nodding clusters of star-shaped, blue, purple, pink, or white flowers, with yellow stamens, from spring to fall, followed by scarlet fruits.
H 6–10ft (2–3m). Min. 45ºF (7ºC).

☼ 💧 ❗ Z12–15

Cissus antarctica (angaroo vine)
Moderately vigorous, evergreen, woody-stemmed, tendril climber. Ovate, pointed, coarsely serrated leaves are lustrous, rich green. **H** to 15ft (5m). Min. 45ºF (7ºC).

◑ 💧 Z10–12

Monstera deliciosa
(Swiss-cheese plant)
Robust, evergreen, woody-stemmed, root climber with large-lobed, holed leaves, 16–36in (40–90cm) long. Mature plants bear cream spathes, followed by scented, edible fruits. **H** to 20ft (6m). Min. 59–64ºF (15–18ºC).

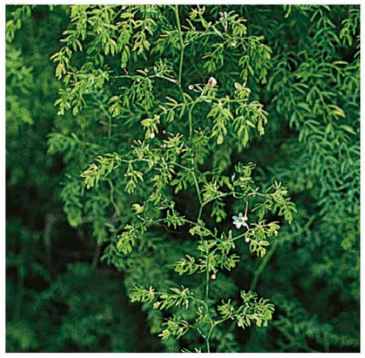
◑ 💧 ❗ Z9–12

Syngonium podophyllum
Evergreen, woody-stemmed, root climber with tufted stems and arrowhead-shaped leaves when young. Mature plants have leaves of 7–9 glossy leaflets up to 1ft (30cm) long.
H 6ft (2m). Min. 61–64ºF (16–18ºC).

◑ 💧 ❗ Z14–15

Solanum wendlandii
Robust, mainly evergreen, prickly-stemmed, scrambling climber with oblong, variably lobed leaves. Lavender flowers are produced in late summer and fall. **H** 10–20ft (3–6m). Min. 45–50ºF (7–10ºC).

☼ 💧 ❗ Z13–15



Asparagus scandens
Evergreen, scrambling climber with lax stems and short, curved, leaflike shoots in whorls of 3. Tiny, nodding, white flowers are borne in clusters of 2–3 in summer, followed by red fruits.
H 3ft (1m) or more. Min. 50ºF (10ºC).

◑ 💧 ❗ Z10–12

Philodendron hederaceum
(Heart leaf)
Fairly fast-growing, evergreen, woody-based, root climber. Rich green leaves are 4–6in (10–15cm) long when young, to 1ft (30cm) long on mature plants. **H** 12ft (4m) or more.
Min. 59–64ºF (15–18ºC).

◑ 💧 ❗ Z10–12

Petrea volubilis
Strong-growing, evergreen, woody-stemmed, twining climber with elliptic, rough-textured leaves and deep violet and lilac-blue flowers borne in simple or branched spikes from late winter to late summer. **H** 20ft (6m) or more.
Min. 50ºF (10ºC).

☼ 💧 Z10–11

Tetrastigma voinierianum
(Chestnut vine)
Strong-growing, evergreen, woody-stemmed, tendril climber. Young stems and leaves are rust-colored and hairy; mature leaves turn lustrous, deep green above. **H** 30ft (10m) or more.
Min. 59–64ºF (15–18ºC).

◑ 💧 Z14–15

YELLOW

***Tecoma capensis* 'Aurea'**
Erect, scrambling, evergreen shrub or climber with lustrous, mid- to dark green leaves. Racemes, to 6in (15cm) long, of slender, tubular, yellow flowers, to 2in (5cm) long, are borne mainly in summer. **H** 12ft (4m), **S** 6ft (2m). Min. 41ºF (5ºC).

☼ ◊ Z12–15

Solandra maxima
(Copa de oro, Golden-chalice vine)
Strong-growing, evergreen, woody-stemmed, scrambling climber with glossy leaves. In spring–summer bears fragrant, pale yellow, later golden flowers. **H** 23–30ft (7–10m) or more. Min. 45–50ºF (7–10ºC).

☼ ◊ ! Z11-1

Thunbergia mysorensis
Evergreen, woody-stemmed, twining climber. Has narrow leaves and pendent spikes of flowers with yellow tubes and recurved, reddish-brown lobes from spring to fall. **H** 20ft (6m). Min. 59ºF (15ºC).

☼ ◊ Z14–15

***Allamanda cathartica* 'Hendersonii'**
Fast-growing, evergreen, woody-stemmed, scrambling climber. Has lance-shaped leaves in whorls and trumpet-shaped, rich bright yellow flowers in summer–fall. **H** to 15ft (5m). Min. 55–59ºF (13–15ºC).

◐ ◊ Z10–12 !

***Senecio macroglossus* 'Variegatus'**
Evergreen, woody-stemmed, twining climber with triangular, fleshy leaves, bordered in white to cream, and, mainly in winter, daisylike, cream flower heads. **H** 10ft (3m). Min. 45ºF (7ºC).

☼ ◊ ! Z12–15

Stigmaphyllon ciliatum
Fast-growing, evergreen, woody-stemmed, twining climber with heart-shaped, pale green leaves fringed with hairs. Bright yellow flowers with ruffled petals are borne in spring–summer. **H** 15ft (5m) or more. Min. 45–50ºF (7–10ºC).

◐ ◊ Z14–15

ORANGE

Canarina canariensis
(Canary Island bellflower)
Herbaceous, tuberous, scrambling climber with triangular, serrated leaves. Has waxy, orange flowers with red veins from late fall to spring. **H** 6–10ft (2–3m).

☼ ◊ Z9–11

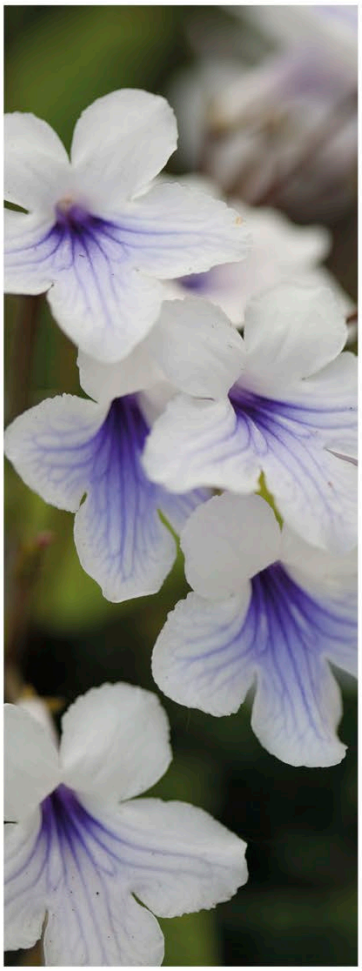
Streptosolen jamesonii
(Marmalade bush)
Evergreen or semievergreen, loosely scrambling shrub. Has ovate, finely corrugated leaves and, mainly in spring–summer, many bright orange flowers. **H** 6–10ft (2–3m). Min. 45ºF (7ºC).

☼ ◊ Z12–15

Pyrostegia venusta (Flame flower, Flame vine, Golden shower)
Fast-growing, evergreen, woody-stemmed, tendril climber with clusters of tubular, golden-orange flowers from fall to spring. **H** 30ft (10m) or more. Min. 55–59ºF (13–15ºC).

☼ ◊ Z10–12

WHITE



***Streptocarpus* 'Crystal Ice'**
Herbaceous, stemless, basal-rosetted perennial with long, narrowly strap-shaped, wrinkled, lightly hairy, green leaves. Produces clusters of 7–13 funnel-shaped, white flowers, with blue veins, in winter. **H** 16in (40cm), **S** 1ft (30cm). Min. 41°F (5°C).

☀ ◑ Z11

Coelogyne cristata
Evergreen, epiphytic orchid for a cool greenhouse. In winter, produces crisp, white flowers, 2in (5cm) across, and marked orange on each lip. Narrowly ovate leaves are 3–4in (8–10cm) long. Needs good light in summer. **H** 1ft (30cm), **S** 2ft (60cm). Min. 50°F (10°C).

◐ ◑ Z9–11

***Chlorophytum comosum* 'Vittatum'**
Evergreen, tufted, rosette-forming perennial. Long, narrow, lance-shaped, creamy-white leaves have green stripes and margins. Irregularly bears small, star-shaped, white flowers on thin stems. **H** and **S** 1ft (30cm). Min. 41°F (5°C).

◐ ◯ Z10–12

Pilea cadierei (Aluminum plant)
Evergreen, bushy perennial with broadly ovate leaves, each with a sharply pointed tip and raised, silvery patches that appear quilted. Produces insignificant, greenish flowers. **H** and **S** 1ft (30cm). Min. 50°F (10°C).

◐ ◯ Z11–12

Peperomia caperata (Emerald ripple)
Evergreen, bushy perennial with pinkish leaf stalks. Has ovate, fleshy, wrinkled, dark green leaves, to 2in (5cm) long, with sunken veins; spikes of white flowers are produced irregularly. **H** and **S** to 6in (15cm). Min. 50°F (10°C).

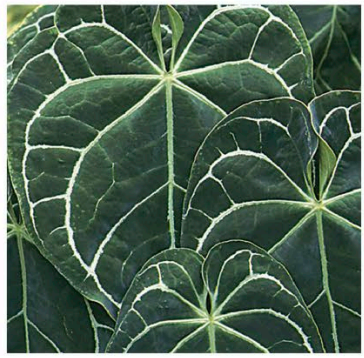
◐ ◯ Z11–12

***Ctenanthe oppenheimiana* 'Tricolor'**
Robust, evergreen, bushy perennial. Has leathery, lance-shaped leaves, more than 1ft (30cm) long, splashed with large, cream blotches, and, intermittently, spikes of 3-petaled, white flowers. **H** and **S** 3ft (1m). Min. 59°F (15°C).

◐ ◑ Z10–12

***Dieffenbachia seguine* 'Exotica'**
Evergreen, tufted perennial, sometimes woody at the base. Broadly lance-shaped leaves, to 1½ft (45cm) long, are blotched with creamy-white. **H** and **S** 3ft (1m) or more. Min. 59°F (15°C).

◐ ◯ ! Z11–12



Anthurium crystallinum (Crystal anthurium)
Evergreen, erect, tufted perennial. Long, velvety, dark green leaves are distinctively pale green- to white-veined. Has long-lasting, red-tinged, green spathes. **H** to 30in (75cm), **S** to 2ft (60cm). Min. 59°F (15°C).

◐ ◑ ! Z11–12

Ruellia devosiana
Evergreen, bushy subshrub with spreading, purplish branches. Leaves are broadly lance-shaped, dark green with paler veins above and purple below. Has mauve-tinged, white flowers in spring–summer. **H** and **S** to 45cm (1½ft) or more. Min. 59°F (15°C).

◐ ◑ Z14–15

Episcia dianthiflora (Lace flower)
Evergreen perennial with creeping prostrate stems. Has thick, velvety leaves with brownish midribs and, intermittently, pure white flowers with fringed petals. **H** 6in (15cm), **S** 1ft (30cm). Min. 59°F (15°C).

◐ ◯ Z9–10

ORCHIDS

Elegant and exotic, orchids are prized for their unusual flowers. There are two main groups. Terrestrials [t] grow in a wide range of habitats in the wild; many are at least frost hardy. Epiphytes [e], the more showy of the two and mostly native to the tropics, cling to tree branches or rocks, obtaining nourishment through their leaves and aerial roots. An aura of mystique surrounds these plants, but their cultivation is not always difficult and some thrive happily indoors as house plants. They need special growing medium and in cool climates must be grown under glass. An orchid hybrid is called a grex [gx] from the Latin for a flock. A grex name applies to all the individual seedlings from any given cross, the individual plants of which may also be given cultivar names. Several cultivars may also be given a Group name within a grex. See also the Plant Dictionary.

Calanthe vestita [t]

***Paphiopedilum* Freckles gx** ⓘ [t]

Rhynchostele rossii [e]

***Cymbidium* Portelet Bay gx** ⓘ [e]

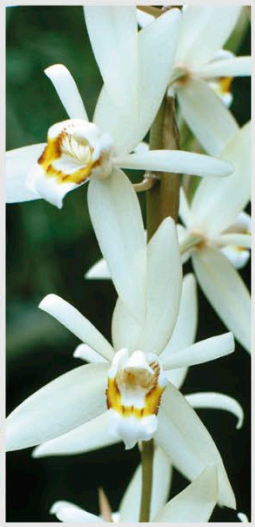
Spiranthes cernua [t]

Brassavola nodosa [e]

Masdevallia tovarensis [e]

Oncidium alexandrae [e]

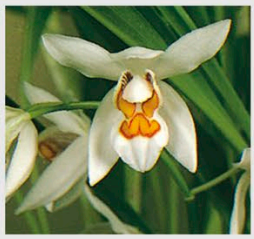
Cypripedium reginae [t]



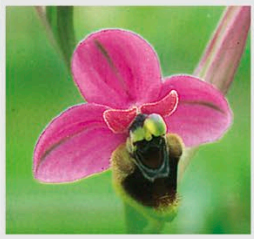
Coelogyne flaccida [e]

***Miltoniopsis* Robert Strauss gx 'Ardingly'** [e]

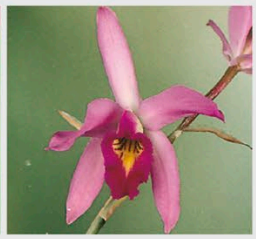
Dendrobium infundibulum [e]



Coelogyne nitida [e]



Ophrys tenthredinifera [t]



Laelia anceps [e]

x *Rhyncholaeliocattleya* Mount Adams gx [e]

Pleione bulbocodioides [t]

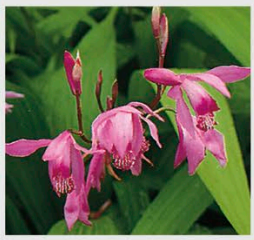
Dendrobium nobile [e]

***Vanda* Rothschildiana gx** [e]

Anacamptis morio [t]

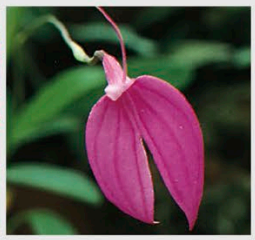
***Phalaenopsis* Lady Pink Lips gx** [e]

Oncidium sotoanum [e]



Bletilla striata [t]

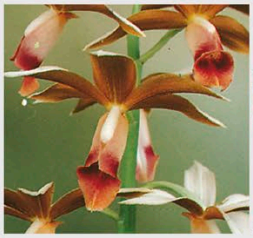
Guarianthe bowringiana [e]



Masdevallia coccinea [e]

***Zygopetalum* Perrenoudii gx** [e]

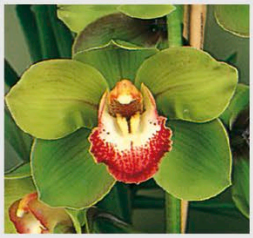
Oncidium Hambühren Stern gx 'Cheam' [e]



Phaius tankervilleae [t]

Miltoniopsis Anjou gx 'St. Patrick' [e]

Brassia aurantiaca [e]

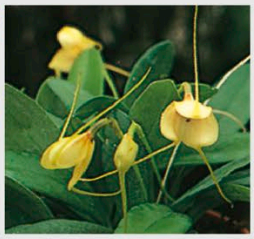


Cymbidium Caithness Ice gx ⓘ [e]

x *Oncidopsis* Cambria gx 'Lensing's Favorite' [e]

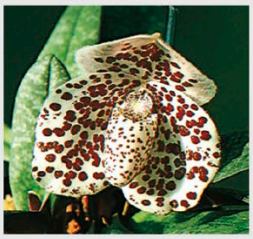
x *Cattlianthe* Rojo gx 'Mont Millais' [e]

Oncidium Tigersun gx 'Orbec' [e]

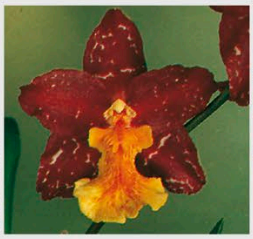


Masdevallia wagneriana [e]

Oncidium Artur Elle gx 'Colombien' [e]

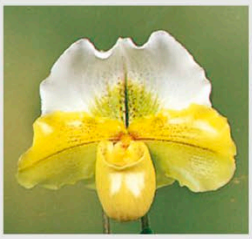


Paphiopedilum bellatulum ⓘ [t]



Oncidium Memoria Commander Wiggs gx 'ay' [e]

Phalaenopsis Lundy gx [e]



Paphiopedilum Buckhurst gx 'Mont Millais' ⓘ [t]

Rossioglossum grande [e]

Paphiopedilum Lyric gx 'Glendora' ⓘ [t]

Paphiopedilum Maudiae gx ⓘ [t]

Paphiopedilum fairrieanum ⓘ [t]

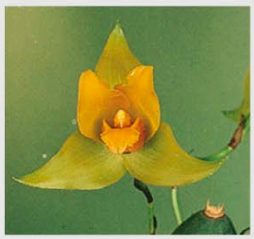
Paphiopedilum armeniacum [t]

Oncidium Eric Young gx [e]

Oncidium Buttercrisp gx [e]

Paphiopedilum rothschildianum [t]

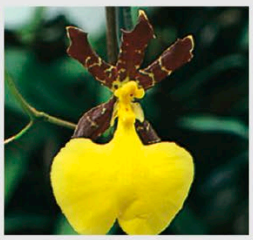
Gomesa flexuosa [e]



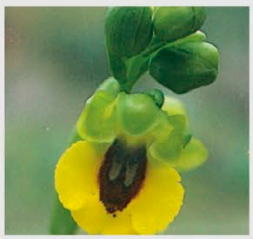
Lycaste cruenta [e]

x *Cattlianthe* Hazel Boyd gx 'Apricot Glow' [e]

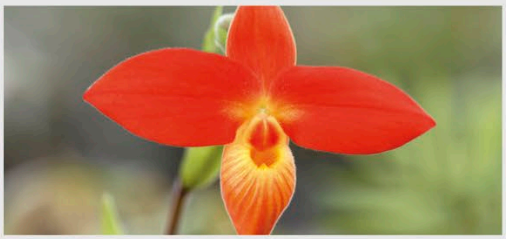
Cymbidium elegans ⓘ [e]



Oncidium tigrinum [e]



Ophrys lutea [t]



Phragmipedium besseae [t]

Psychopsis papilio [e]

WHITE

***Spathiphyllum* 'Mauna Loa'**
Robust, evergreen, rhizomatous perennial. Has long, lance-shaped, glossy leaves. Irregularly throughout the year, bears fleshy, white spadices of fragrant flowers enclosed in large, ovate, pure white spathes. **H** and **S** 1½–2ft (45–60cm). Min. 59ºF (15ºC).

☼ ◑ ⓘ Z14–15

***Tradescantia fluminensis* 'Albovittata'**
Strong-growing, evergreen perennial with trailing, rooting stems. Blue-green leaves have broad, white stripes. Bears small, white flowers. **H** 1ft (30cm), **S** indefinite. Min. 41–45ºF (5–7ºC).

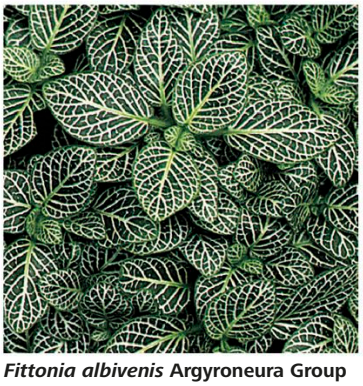
☼ ◊ ⓘ Z13–15

Spathiphyllum wallisii (Peace lily)
Evergreen, tufted, rhizomatous perennial. Has clusters of long, lance-shaped leaves. Fleshy, white spadices of fragrant flowers in white spathes are irregularly produced. **H** and **S** 1ft (30cm) or more. Min. 50ºF (10ºC).

☼ ◑ ⓘ Z14–15

Angraecum sesquipedale
Evergreen, epiphytic orchid. Waxy, white flowers, 3in (8cm) across, each with a 1ft (30cm) long spur, are borne, usually 2 per stem, in winter. Has narrow, semirigid, horizontal leaves, 6in (15cm) long. **H** and **S** 1ft (30cm) or more. Min. 64°F (18°C).

☼ ◑ Z10–12



***Fittonia albivenis* Argyroneura Group** (Silver net-leaf)
Evergreen, creeping perennial with small, ovate, white-veined, green leaves. Remove any flowers. **H** to 6in (15cm), **S** indefinite. Min. 59ºF (15ºC).

☼ ◊ Z11–12

***Aglaonema commutatum* 'Treubii'**
Evergreen, erect, tufted perennial. Lance-shaped leaves, to 1ft (30cm) long, are marked with pale green or silver. Occasionally produces greenish-white spathes. **H** and **S** to 1½ft (45cm). Min. 59ºF (15ºC).

☼ ◊ ⓘ Z11–12

***Achimenes* 'Little Beauty'**
Bushy perennial with ovate, toothed leaves. Large, funnel-shaped, deep pink flowers, with yellow eyes, are produced in summer. **H** 10in (25cm), **S** 1ft (30cm). Min. 50ºF (10ºC).

☼ ◊ Z11–12

***Streptocarpus* 'Nicola'**
Evergreen, stemless perennial with a rosette of strap-shaped, wrinkled leaves. Funnel-shaped, rose-pink flowers are produced intermittently in small clusters. **H** 10in (25cm), **S** 20in (50cm). Min. 50ºF (10ºC).

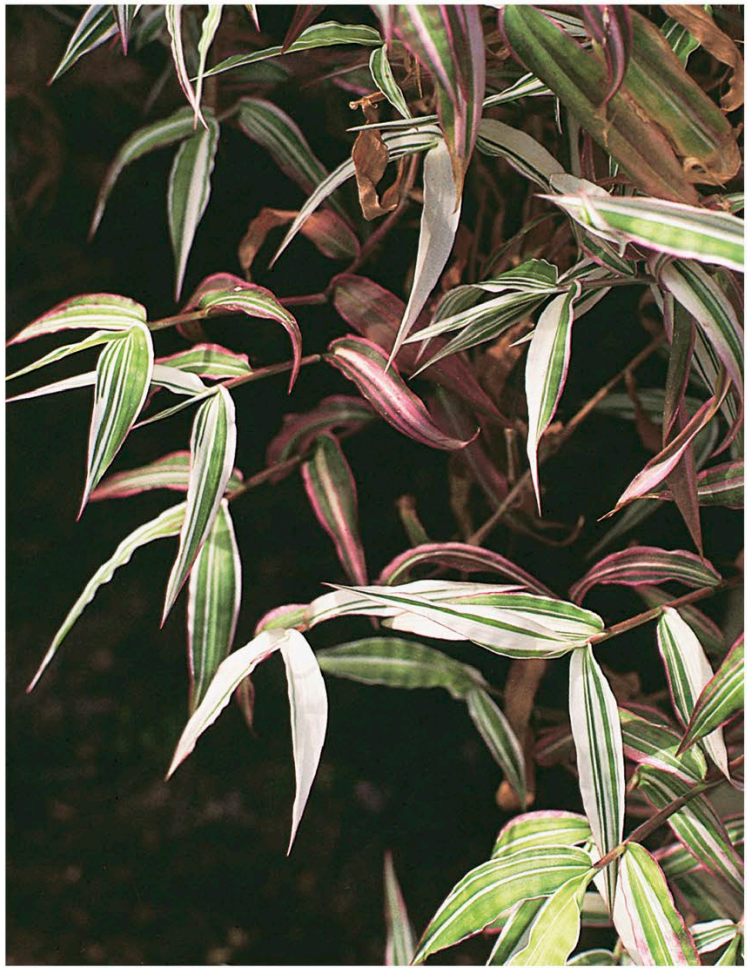
◐ ◊ Z13–15

***Saintpaulia* 'Colorado'**
Evergreen, rosette-forming perennial with broadly ovate to oval, dark green leaves. Produces star-shaped, frilled, single, magenta flowers all year. **H** 6–8in (15–20cm). Min. 59°F (15°C).

◐ Z10–12

Tradescantia sillamontana
Evergreen, erect perennial. Ovate, stem-clasping leaves are densely covered with white, woolly hairs. Produces clusters of small, bright purplish-pink flowers in summer. **H** and **S** to 1ft (30cm).

☼ ◊ ! Z14–15



***Oplismenus hirtellus* 'Variegatus'**
Evergreen, creeping, perennial grass with wiry, rooting stems. White-striped leaves, with wavy margins, are often tinged pink. Bears inconspicuous flowers intermittently. **H** 8in (20cm) or more, **S** indefinite. Min. 41ºF (5ºC).

◐ ◊ Z11–12

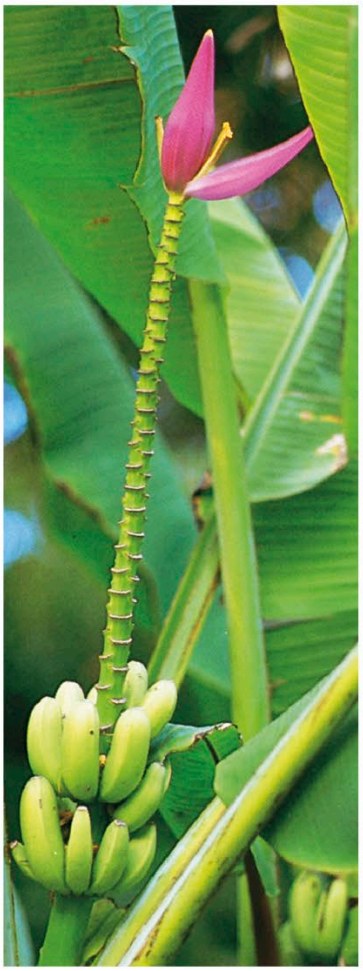
Kohleria warszewiczii
Erect, bushy, rhizomatous perennial with white-haired stems. Has scalloped, hairy leaves and clusters of tubular, hairy, pink-and-white flowers, with purple-spotted, green lobes, from summer to fall. **H** 2ft (60cm) or more, **S** 1½ft (45cm). Min. 59ºF (15ºC).

◐ ◊ Z10–12

Tradescantia zebrina
(Silver inch plant)
Evergreen, trailing or mat-forming perennial. Blue-green leaves, purple-tinged beneath, have 2 broad, silver bands. Bears pink or violet-blue flowers intermittently all year. **H** 6in (15cm), **S** indefinite. Min. 41–45ºF (5–7ºC).

☼ ◊ ! Z14–15

PINK



Musa ornata (Flowering banana)
Evergreen, palmlike, suckering perennial with oblong, waxy, bluish-green leaves to 6ft (2m) long. Bears erect, yellow-orange flowers, with pinkish bracts, in summer, then greenish-yellow fruits. **H** to 10ft (3m), **S** 7ft (2.2m). Min. 50ºF (10ºC).

☼ ◊ Z9–11

Caladium bicolor **'Pink Beauty'**
Tufted, tuberous perennial. Has long-stalked, triangular, pink-mottled, green leaves, to 1½ft (45cm) long, with darker pink veins. White spathes are produced in summer. **H** and **S** 3ft (90cm). Min. 55ºF (13ºC).

◐ ◊ ! Z9–11

RED

Anigozanthos manglesii
(Red-and-green kangaroo paw)
Vigorous, bushy perennial that bears racemes of large, tubular, woolly, red-and-green flowers in spring and early summer. Has long, narrow, gray-green leaves. May suffer from ink disease. **H** 3ft (1m), **S** 1½ft (45cm).

☼ ◊ pH Z10–11

Doryanthes palmeri
Evergreen perennial with a rosette of arching, ribbed leaves, to 6ft (2m) long. Intermittently bears panicles of small, red-bracted, orange-red flowers, white within. Flowers are often replaced by bulbils. **H** 6–8ft (2–2.5m), **S** 8ft (2.5m). Min. 36ºF (2ºC).

☼ ◊ Z9–11

Bromelia balansae (Heart of flame)
Evergreen, clump-forming, basal-rosetted perennial bearing strap-shaped, arching, gray-green leaves with hooked spines. Club-shaped panicles of tubular, red or purple flowers, with long, bright red bracts, are borne in spring–summer. **H** 3ft (1m), **S** 5ft (1.5m). Min. 59ºF (15ºC).

☼ ◊ Z9–11

Columnea x banksii
Evergreen, trailing perennial with ovate, fleshy leaves, glossy above, purplish-red below. Tubular, hooded, brilliant red flowers, to 3in (8cm) long, are produced from spring to winter. Makes a useful plant for a hanging basket. **H** 3ft (1m), **S** indefinite. Min. 59ºF (15ºC).

◐ ◊ Z11–12

Russelia equisetiformis (Coral plant)
Evergreen, branching, bushy subshrub with rushlike stems and tiny leaves. Showy, pendent clusters of tubular, scarlet flowers are produced in summer–fall. **H** to 3ft (1m) or more, **S** 2ft (60cm). Min. 50ºF (10ºC).

☼ ◊ Z11–12

Kohleria eriantha
Robust, bushy, rhizomatous perennial with reddish-haired stems. Ovate leaves, to 5in (13cm) long, are edged with red hairs. Bears tubular, red flowers, with yellow-spotted lobes, in nodding clusters in summer. **H** and **S** 3ft (1m) or more. Min. 59ºF (15ºC).

◐ ◊ Z10–11

Anthurium andraeanum
(Flamingo flower)
Evergreen, erect perennial. Long-stalked, ovate leaves, with a heart-shaped base, are 8in (20cm) long. Produces long-lasting, bright red spathes with yellow spadices. **H** 2–2½ft (60–75cm), **S** 20in (50cm). Min. 59ºF (15ºC).

◐ ◊ ! Z11–12

Sinningia **'Switzerland'**
Short-stemmed, tuberous perennial with rosettes of ovate, velvety leaves, to 8in (20cm) long. In summer, bears large, fleshy, trumpet-shaped, bright scarlet flowers with ruffled, white edges. **H** to 1ft (30cm), **S** 1½ft (45cm). Min. 59ºF (15ºC).

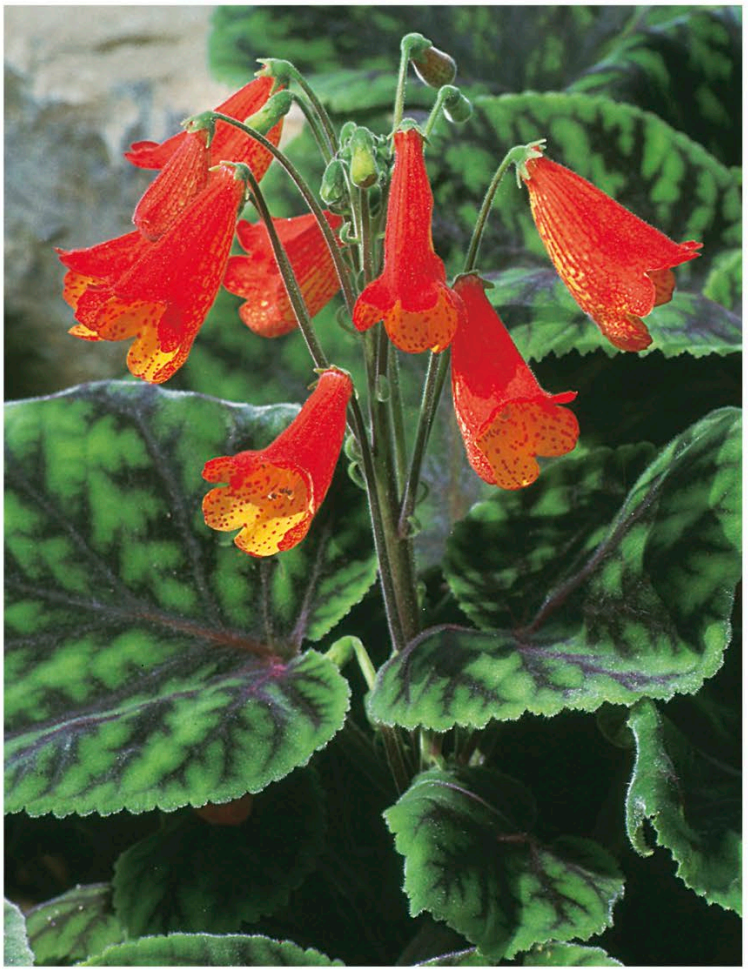
◐ ◊ Z14–15

Columnea crassifolia
Evergreen, shrubby perennial with fleshy, lance-shaped leaves. Erect, tubular, hairy, scarlet flowers, about 3in (8cm) long, each with a yellow throat, are produced from spring to fall. **H** and **S** to 1½ft (45cm). Min. 59ºF (15ºC).

◐ ◊ Z10–11

BROMELIADS

Bromeliads, or plants that belong to the family *Bromeliaceae*, are distinguished by their bold, usually rosetted foliage and showy flowers in shades of white, red, or purple, borne in dense, cylindrical or conical inflorescences in summer. The flowers are followed by ovoid, yellow fruits containing large, brown seeds. Many bromeliads are epiphytes or air plants (absorbing their food through moisture in the atmosphere), and will grow outdoors only in tropical regions. In cooler climates, bromeliads make attractive house plants or will thrive in a warm greenhouse. Follow watering instructions with care.



***Smithiantha* 'Orange King'**
Strong-growing, erect, rhizomatous perennial. Large, scalloped, velvety leaves are emerald-green with dark red-marked veins. In summer–fall, produces tubular, orange-red flowers, red-spotted within and with yellow lips. **H** and **S** to 2ft (60cm). Min. 59ºF (15ºC).

☼ ◊ Z14–15

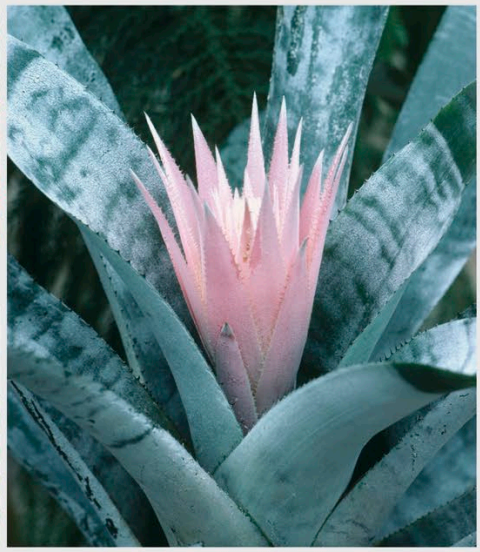
Episcia cupreata
Evergreen, creeping perennial. Has small, downy, wrinkled leaves, usually silver-veined or -banded, and, intermittently, scarlet flowers marked yellow within. **H** 4in (10cm), **S** indefinite. Min. 59ºF (15ºC).

☼ ◊ Z10–12

Nautilocalyx lynchii
Robust, evergreen, erect, bushy perennial. Broadly lance-shaped, slightly wrinkled leaves are glossy, greenish-red above, reddish beneath. In summer, bears tubular, red-haired, pale yellow flowers with red calyces. **H** and **S** to 2ft (60cm). Min. 59ºF (15ºC).

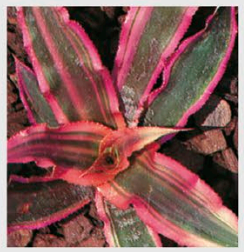
☼ ◊ Z10–12

Tillandsia argentea

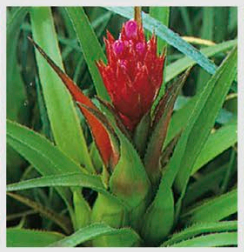


***Ananas bracteatus* 'Tricolor'**

Aechmea fasciata

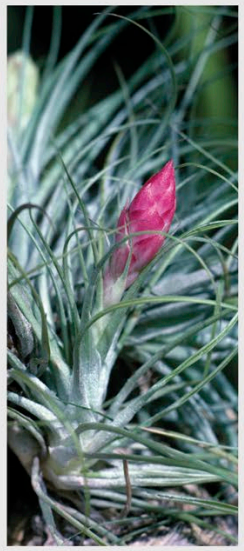


***Cryptanthus bivittatus* 'Pink Starlight'**



Aechmea recurvata

Vriesea splendens



Tillandsia stricta

Neoregelia concentrica

Tillandsia lindenii

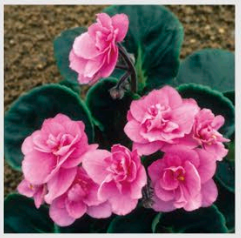
Puya chilensis

AFRICAN VIOLETS

African violet is the common name for the genus *Saintpaulia*, although it is often applied to the numerous cultivars derived from *S. ionantha*. These low-growing, rosetted, evergreen perennials have a wide range of attractive flower colors, varying from white, pink, blue, and violet, to bi- or multicolored. Their petal edges can be ruffled, rounded, frilled, or fringed, and leaves are somewhat succulent, usually hairy, and, in some cases, variegated. They may be grown as summer bedding in warm, humid climates but also make attractive indoor potted plants, flowering freely throughout the year if kept in a suitable draft-free, light, humid position.

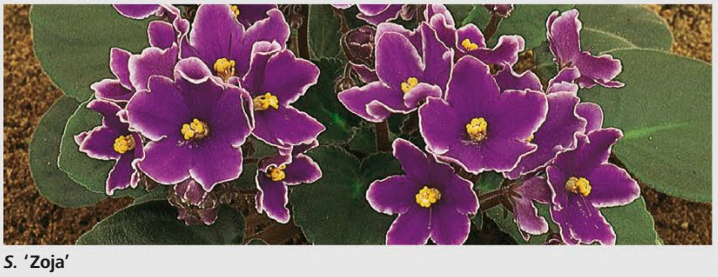
***S.* 'Powder Keg'**

***S.* 'Ice Maiden'**



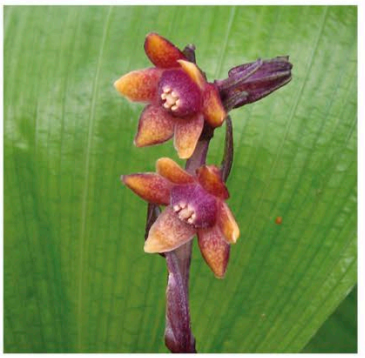
***S.* 'Rococco Anna'**

***S.* 'Bright Eyes'**



***S.* 'Zoja'**

PURPLE



Peliosanthes arisanensis
Evergreen perennial with slow-spreading rhizomes. Stems have oblong, pleated, thin-textured, light green leaves, 8–12in (20–30cm) long, and in spring bear spikes of up to 20, 6-petaled, nodding, purple-centered, yellow flowers. **H** 1ft (30cm), **S** 16in (40cm).

☀ ◐ pH Z10–11

Heterocentron elegans
Evergreen, mat-forming subshrub with dense, creeping, mid-green foliage. Profuse, bright deep purple flowers open summer–fall and, under glass, in winter. **H** 2in (5cm), **S** indefinite. Min. 41ºF (5ºC).

☼ Z11–12

Browallia speciosa (Bush violet)
Bushy perennial, usually grown as an annual, propagated by seed each year. Has ovate leaves to 4in (10cm) long and showy, violet-blue flowers with white eyes, the season depending when sown. **H** 2–2½ft (60–75cm), **S** 1½ft (45cm). Min. 50–59ºF (10–15ºC).

☼ Z10–11

Tetranema roseum (Mexican violet)
Short-stemmed perennial with crowded, stalkless leaves, bluish-green beneath. Intermittently, bears nodding, purple flowers with paler throats. **H** to 8in (20cm), **S** 1ft (30cm). Min. 55ºF (13ºC).

◑ Z10–15

***Goeppertia majestica* 'Sanderiana'**
Evergreen, clump-forming perennial. Broadly elliptic, leathery, glossy leaves, to 2ft (60cm) long, are dark green with pink to white lines above, and purple beneath. Intermittently has short spikes of white to violet flowers. **H** 4–5ft (1.2–1.5m), **S** 3ft (1m). Min. 59ºF (15ºC).

◑ Z11–12

Alocasia cuprea
Evergreen, tufted perennial. Ovate leaves 1ft (30cm) long, with a metallic sheen and darker, impressed veins above, purple below; leaf stalks arise from the lower surface. Purplish spathes appear intermittently. **H** and **S** to 3ft (1m). Min. 59ºF (15ºC).

◑ Z10–12 !

Nepenthes* x *hookeriana
Evergreen, epiphytic, insectivorous perennial with ovate, leathery leaves to 1ft (30cm) long, and pendent, pale green pitchers, with reddish-purple markings and a spurred lid, to 5in (13cm) long. **H** 2–2½ft (60–75cm). Min. 64ºF (18ºC).

☀ ◑ Z10–12

Hemigraphis repanda
Evergreen, prostrate perennial with spreading, rooting stems. Lance-shaped, toothed, purple-tinged leaves, 2in (5cm) long, are darker purple below. Produces tiny, tubular, white flowers intermittently. **H** to 6in (15cm). Min. 59ºF (15ºC).

☀ ◑ Z11–12

Dichorisandra reginae
Evergreen, erect, clump-forming perennial. Glossy, often silver-banded and flecked leaves are purple-red beneath. Bears small spikes of densely set, purple-blue flowers in summer–fall. **H** 2–2½ft (60–75cm), **S** to 1ft (30cm). Min. 54ºF (12ºC).

☀ ◑ Z10–12

***Streptocarpus* 'Bethan'**
Rhizomatous perennial with rosettes of strap-shaped, finely hairy leaves, to 9in (23cm) long. Cymes of up to 6 pale violet- blue flowers, 2in (5cm) across, with purple veins on the 3 lower lobes, are borne from spring to fall. **H** 9in (23cm), **S** 17in (43cm). Min. 41ºF (5ºC).

☀ ◑ Z10–12

Pycnostachys dawei
Strong-growing, bushy perennial with toothed, oblong leaves, 5–12in (12–30cm) long, that are reddish below. Produces compact spikes of tubular, 2-lipped, bright blue flowers in winter–spring. **H** 4–5ft (1.2–1.5m), **S** 1–3ft (30–90cm). Min. 54ºF (12ºC).

☀ ◑ Z9–11

Dionaea muscipula (Venus flytrap)
Evergreen, insectivorous perennial with rosettes of 6 or more spreading, hinged leaves, pink-flushed inside, edged with stiff bristles. Has clusters of tiny, white flowers in summer. **H** 4in (10cm), **S** 1ft (30cm). Min. 41ºF (5ºC).

☀ ◑ Z8–10

Drosera spatulata
Evergreen, insectivorous perennial with rosettes of spoon-shaped leaves that have sensitive, red, glandular hairs. Bears many small, pink or white flowers on leafless stems in summer. **H** and **S** 3in (8cm).

☀ ◑ Z8–11

Drosera capensis (Cape sundew)
Evergreen, insectivorous perennial. Rosettes of narrow leaves have sensitive, red, glandular hairs. Many small, purple flowers are borne on leafless stems in summer. **H** and **S** to 6in (15cm).

☀ ◑ Z8–11

GREEN

Ensete ventricosum
Evergreen, palmlike perennial with small, bananalike fruits. Produces leaves, 20ft (6m) long, with reddish midribs and, intermittently, reddish-green flowers with dark red bracts.
H 20ft (6m), **S** 10ft (3m) or more.
Min. 41ºF (5ºC).

☼ ◊ Z10

Peperomia griseoargentea
(Ivy peperomia, Silver-leaf peperomia)
Evergreen, bushy perennial with ovate, fleshy leaves, 2in (5cm) long, heart-shaped at the base, with a quilted surface and silvery sheen, coppery along deep veins. Flowers are insignificant. **H** to 6in (15cm), **S** 8in (20cm). Min. 50ºF (10ºC).

☼ ◊ Z10–11

Pilea nummulariifolia
(Creeping Charlie)
Evergreen, mat-forming perennial with creeping, rooting, reddish stems. Rounded, pale green leaves, ¾in (2cm) wide, have a ridged surface. Flowers are insignificant. **H** to 2in (5cm), **S** 1ft (30cm). Min. 50ºF (10ºC).

☼ ◊ Z11–15

Peperomia glabella (Wax privet)
Evergreen perennial with wide-spreading, red stems. Produces broadly elliptic to slightly obovate, fleshy, glossy, bright green leaves with black glands, to 2in (5cm) long, and insignificant flowers. **H** to 6in (15cm), **S** 1ft (30cm). Min. 50ºF (10ºC).

☼ ◊ Z10–11

Xanthosoma sagittifolium
Spreading, tufted perennial with thick stems. Broadly arrow-shaped leaves, 2ft (60cm) or more long, on long leaf stalks, are green with a grayish bloom. Produces green spathes intermittently during the year. **H** to 6ft (2m) in flower, **S** 6ft (2m) or more. Min. 55ºF (13ºC).

☼ ◑ Z14–15 !

Asparagus densiflorus
Evergreen, trailing perennial with clusters of narrow, bright green, leaflike stems. In summer, produces pink-tinged, white flowers, followed by red fruits. Suits a hanging basket. **H** to 3ft (1m), **S** 20in (50cm). Min. 50ºF (10ºC).

☼ ◊ Z9–11 !

Asparagus densiflorus **'Myersii'**
(Foxtail fern)
Evergreen, erect perennial producing spikes of tight, feathery clusters of leaflike stems and pinkish-white flowers in summer, then red fruits. **H** to 3ft (1m), **S** 20in (50cm). Min. 50ºF (10ºC).

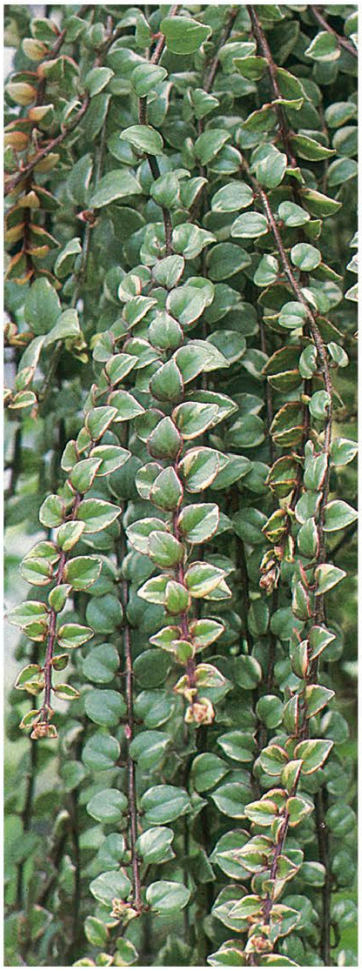
☼ ◊ ! Z9–11

Peperomia obtusifolia **'Variegata'**
Evergreen, bushy perennial with spade-shaped, fleshy leaves, to 8in (20cm) long, that have irregular, yellowish-green to creamy-white margins and usually grayish centers. Flowers are insignificant. **H** and **S** to 6in (15cm). Min. 50ºF (10ºC).

☼ ◊ Z10–12

Dieffenbachia seguine **'Rudolph Roehrs'**
Evergreen, tufted perennial, sometimes woody at the base. Leaves, to 1½ft (45cm) long, are yellowish-green or white with green midribs and margins. **H** and **S** 3ft (1m). Min. 59ºF (15ºC).

☼ ◊ Z10–12 !



***Columnea microphylla* 'Variegata'**
Evergreen, trailing perennial. Produces rounded leaves, narrowly bordered with cream, and tubular, hooded, scarlet flowers, with yellow throats, in winter–spring. **H** 3ft (1m) or more, **S** indefinite. Min. 59ºF (15ºC).

☀ ◑ Z11–12

Goeppertia zebrina (Zebra plant)
Robust, evergreen, clump-forming perennial with long-stalked, velvety, dark green leaves, to 60cm (2ft) long (less if pot-grown), with paler veins, margins, and midribs. Bears short spikes of white to pale purple flowers. **H** and **S** to 3ft (1m). Min. 59ºF (15ºC).

☀ Z11

Aglaonema pictum
Evergreen, erect, tufted perennial. Oval leaves, to 6in (15cm) long, are irregularly marked with grayish-white or gray-green. Bears creamy-white spathes in summer. **H** and **S** to 2ft (60cm). Min. 55ºF (13ºC).

☀ Z10–12

***Aglaonema* 'Silver King'**
Evergreen, erect, tufted perennial. Broadly lance-shaped, mid-green leaves, to 1ft (30cm) long, are marked with dark and light green. Produces greenish-white spathes in summer. **H** and **S** to 1½ft (45cm). Min. 55ºF (13ºC).

☀ Z11

***Maranta leuconeura* 'Erythroneura'** (Herringbone plant)
Evergreen perennial. Oblong leaves have veins marked red, with paler yellowish-green midribs, and are upright at night, flat by day. **H** and **S** to 1ft (30cm). Min. 59ºF (15ºC).

☀ Z11–12

***Sansevieria trifasciata* 'Hahnii'**
Evergreen, stemless perennial with a rosette of about 5 stiff, erect, broadly lance-shaped and pointed leaves, banded horizontally with pale green or white. Occasionally bears small, pale green flowers. **H** 6–12in (15–30cm), **S** 4in (10cm). Min. 55ºF (13ºC).

☀ Z14–15

Goeppertia makoyana (Peacock plant)
Evergreen, clump-forming perennial. Horizontal leaves, 1ft (30cm) long, are dark and light green above, reddish-purple below. Bears short spikes of white flowers intermittently. **H** to 2ft (60cm), **S** to 4ft (1.2m). Min. 59ºF (15ºC).

☀ Z11–12

***Maranta leuconeura* 'Kerchoveana'** (Rabbit tracks)
Evergreen perennial that intermittently bears white to mauve flowers. Oblong leaves with dark brown blotches become greener with age and are upright at night, flat by day. **H** and **S** to 1ft (30cm). Min. 59ºF (15ºC).

☀ Z11–12

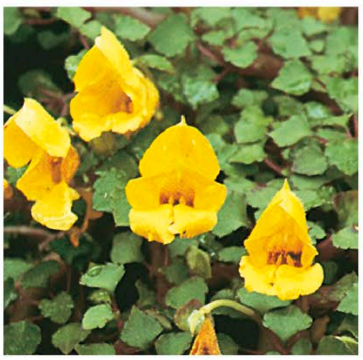
YELLOW

Arctotheca calendula
(Cape dandelion)
Carpeting perennial. Leaves are woolly below, rough-haired above. Heads of daisylike, bright yellow flowers, with darker yellow centers, are borne from late spring to fall. **H** 1ft (30cm), **S** indefinite.

☼ ◊ Z9–11

Hedychium gardnerianum
Upright, rhizomatous perennial. In late summer and early fall, bears many spikes of short-lived, fragrant, lemon-yellow and red flowers. Lance-shaped leaves are grayish-green, most markedly when young. **H** 5–6ft (1.5–2m), **S** 2½ft (75cm). Min. 41ºF (5ºC).

☼ ◑ Z8–10



Impatiens repens
Evergreen, creeping perennial with rooting stems. Has small, ovate to rounded leaves and, in summer, bears yellow flowers, each with a large, hairy spur. **H** to 2in (5cm), **S** indefinite. Min. 50ºF (10ºC).

☼ ◑ Z11–12

***Sansevieria trifasciata* 'Laurentii'**
Evergreen, stemless perennial with a rosette of about 5 stiff, erect, lance-shaped and pointed leaves with yellow margins. Occasionally bears pale green flowers. Propagate by division to avoid reversion. **H** 1½–4ft (45cm–1.2m), **S** 4in (10cm). Min. 50–59ºF (10–15ºC).

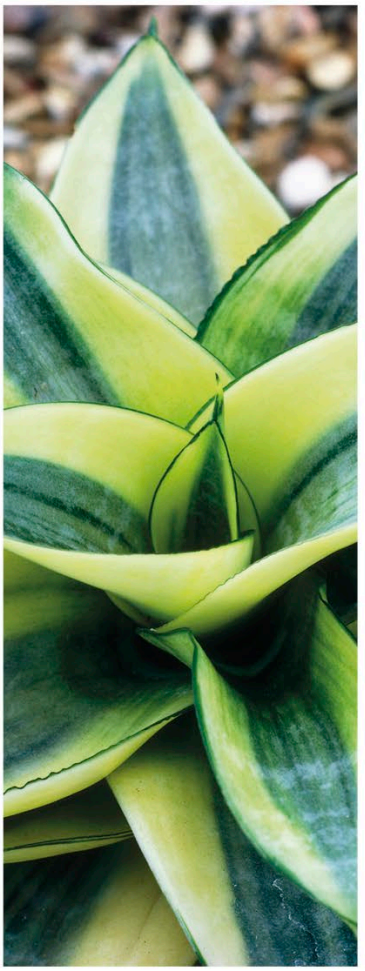
☼ ◊ Z14–15

***Aphelandra squarrosa* 'Louisae'**
Evergreen, erect perennial. Long, ovate, glossy, slightly wrinkled, dark green leaves have white veins and midribs. Bears dense spikes of golden-yellow flowers from axils of yellow bracts in late summer to fall. **H** to 3ft (1m), **S** 2ft (60cm). Min. 55ºF (13ºC).

☼ ◊ Z11–12

***Peristrophe hyssopifolia* 'Aureovariegata'**
Evergreen, bushy perennial. Small leaves are broadly lance-shaped with long, pointed tips and central, creamy-yellow blotches. Bears tubular, rose-pink flowers in winter. **H** to 2ft (60cm) or more, **S** 4ft (1.2m). Min. 59ºF (15ºC).

☼ ◊ Z10–11



***Sansevieria trifasciata* 'Golden Hahnii'**
Evergreen, stemless perennial with a rosette of about 5 stiff, erect, broadly lance-shaped leaves with wide, yellow borders. Sometimes bears small, pale green flowers. **H** 6–12in (15–30cm), **S** 4in (10cm). Min. 59ºF (15ºC).

◑ ◊ Z14–15

Anigozanthos flavidus
(Yellow kangaroo paw)
Bushy perennial with racemes of large, woolly, tubular, yellowish-green flowers, with reddish anthers, borne from spring–summer. Narrow leaves, to 2ft (60cm) long, are mid-green. **H** 4ft (1.2m), **S** 1½ft (45cm). Min. 41ºF (5ºC).

☼ ◊ pH Z10–12

ORANGE

Strelitzia reginae
(Bird-of-paradise flower)
Evergreen, clump-forming perennial with long-stalked, bluish-green leaves. Bears beaklike, orange-and-blue flowers in boat-shaped, red-edged bracts mainly in spring. **H** over 3ft (1m), **S** 2½ft (75cm). Min. 50ºF (10ºC).

◑ ◊ Z13–15

Clivia miniata
Evergreen, tuft-forming rhizome with strap-shaped, semierect, basal, dark green leaves, 16–24in (40–60cm) long. Stems each produce a head of 10–20 orange or red flowers in spring or summer. **H** 16in (40cm), **S** 1–2ft (30–60cm). Min. 50ºF (10ºC).

◑ ◊ ! Z9–11

GINGERS

Gingers have been cultivated in Europe for more than 100 years and bring colorful, intricate flowers, tropical foliage, and, quite literally, spice to the garden. Evergreen types need to be overwintered under glass or gradually dried off in fall to induce artificial dormancy, whereas many deciduous types, such as *Roscoea* and *Cautleya*, will die off naturally and, being frost hardy, can remain in the ground with a protective mulch. Most gingers do not tolerate wet winter conditions and benefit from some shade. A brighter location encourages flowering, whereas shade encourages better foliage, so site accordingly. They should not be allowed to dry out while in growth, and are heavy feeders, so give them frequent applications of liquid feed.

Alpinia zerumbet

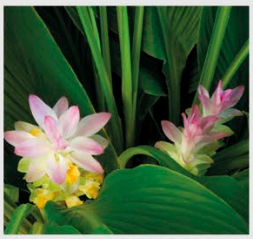
Hedychium stenopetalum

Hedychium densiflorum

Hedychium yunnanense

Hedychium thyrsiforme

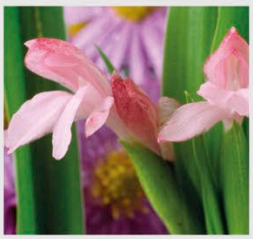
Costus speciosus



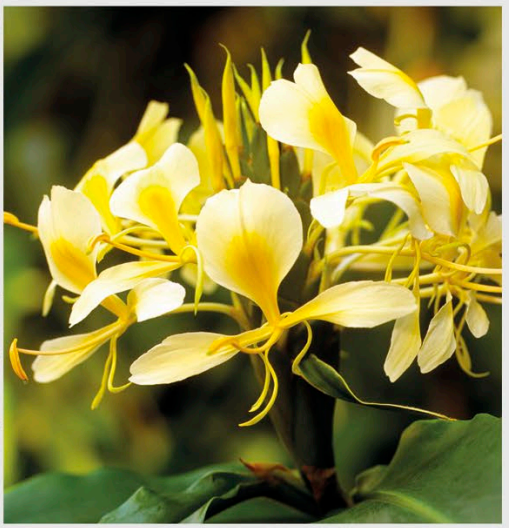
Curcuma petiolata

Alpinia purpurata

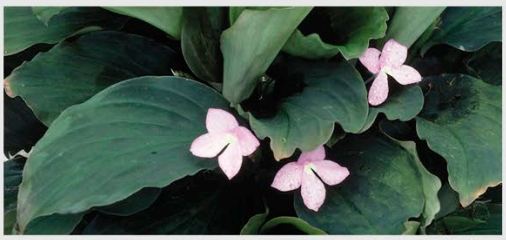
Curcuma zedoaria



Roscoea scillifolia

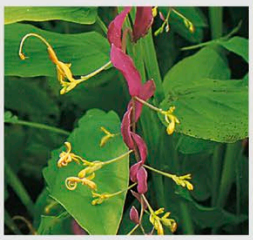


Hedychium maximum



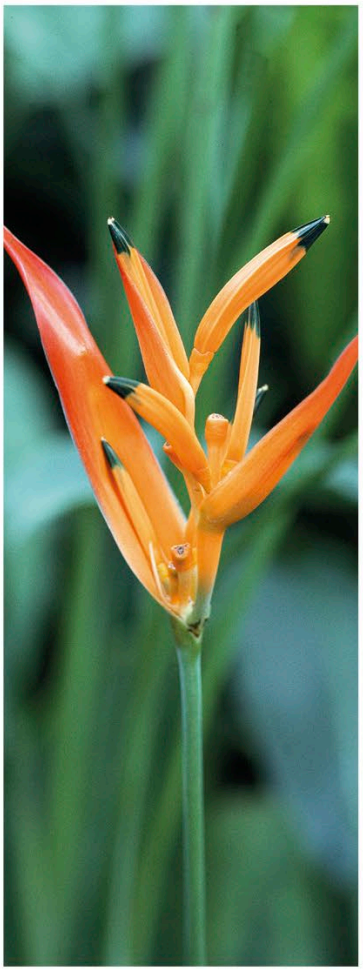
Kaempferia pulchra

Hedychium densiflorum



Globba winitii

ORANGE



Heliconia psittacorum (Parrot's flower, Parrot's plantain)
Tufted perennial with long-stalked, lance-shaped leaves. In summer, mature plants produce green-tipped, orange flowers with narrow, glossy, orange-red bracts. **H** to 6ft (2m), **S** 3ft (1m). Min. 59ºF (15ºC).

☼ ◊ Z11–12

Aeschynanthus speciosus
Evergreen, trailing perennial with waxy, narrowly ovate leaves usually borne in whorls. Erect, tubular, bright orange-red flowers are produced in large clusters in summer. **H** and **S** 1–2ft (30–60cm). Min. 64ºF (18ºC).

☼ ◖ Z11–12

GREEN

Cyperus involucratus
Evergreen, tuft-forming, perennial sedge with leaflike bracts forming a whorl beneath the clustered flower spikes in summer. **H** to 3ft (1m), **S** 1ft (30cm). Min. 41–50ºF (5–10ºC).

☼ ◖ Z9–12

Cyperus papyrus (Paper reed, Papyrus)
Evergreen, clump-forming, perennial sedge with stout, triangular, leafless stems, bearing huge umbels of spikelets with up to 100 rays, in summer. Grows in water. **H** to 10–15ft (3–5m), **S** 3ft (1m). Min. 45–50ºF (7–10ºC).

☼ ● Z9–12

Asplenium* x *lucrosum
Evergreen or semievergreen fern with ovate, triangular or lance-shaped to oblong, dark green fronds, 4ft (1.2m) long. The lance-shaped to oblong segments bear numerous plantlets. **H** and **S** 4ft (1.2m).

☼ ◖ Z10–12

Selaginella martensii
Evergreen, mosslike perennial with dense, much-branched, frondlike sprays of glossy, rich green foliage. **H** and **S** 9in (23cm). Min. 50–59ºF (10–15ºC).

☼ ◊ Z12–15

Nephrolepis exaltata (Sword fern)
Evergreen fern. Has erect, sometimes spreading, lance-shaped, divided, pale green fronds borne on wiry stems. **H** and **S** 3ft (1m) or more. Min. 50ºF (10ºC).

☀ ◖ Z9–11

Selaginella kraussiana
Evergreen, trailing, more or less prostrate, mosslike perennial with bright green foliage. **H** ½in (1cm), **S** indefinite. Min. 41ºF (5ºC).

☼ ◊ Z7–10

WHITE

Asplenium nidus (Bird's-nest fern)
Evergreen fern. Produces broadly lance-shaped, glossy, bright green fronds in a shuttlecocklike arrangement. **H** 2–4ft (60cm–1.2m), **S** 1–2ft (30–60cm). Min. 50ºF (10ºC).

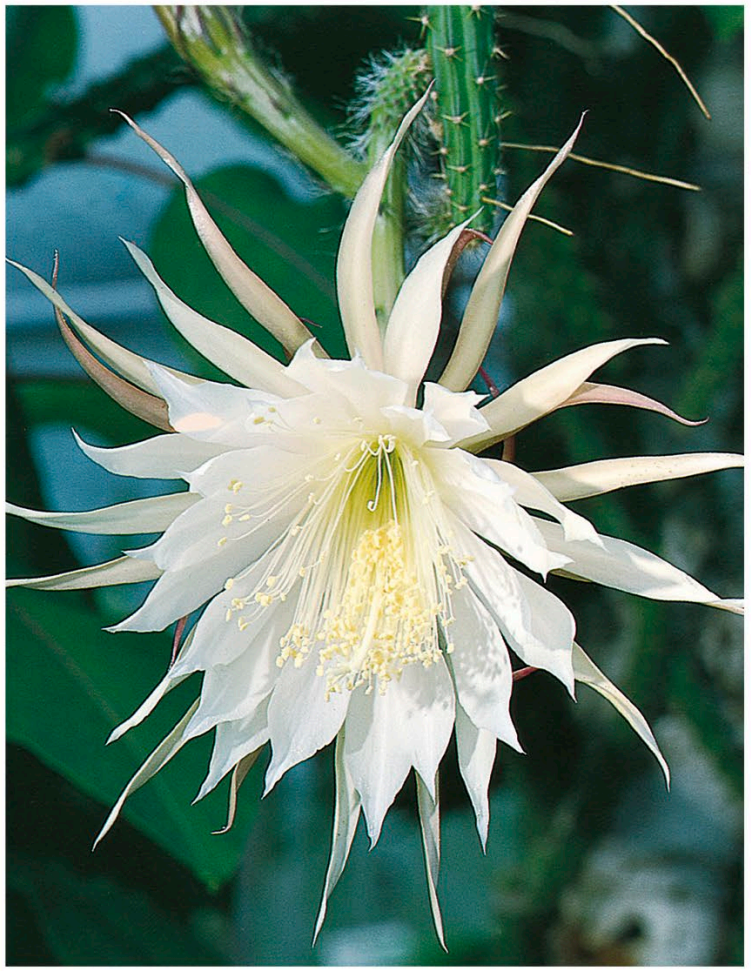
☀ ◑ Z11–12

Phlebodium aureum (Golden polypody)
Evergreen fern with creeping, golden-scaled rhizomes. Has arching, deeply lobed, mid-green or glaucous fronds with attractive, orange-yellow sporangia on reverses. **H** 3–5ft (90cm–1.5m), **S** 2ft (60cm). Min. 50ºF (10ºC).

☀ ◑ Z10–12

Platycerium bifurcatum
(Common staghorn fern)
Evergreen, epiphytic fern with broad, platelike sterile fronds and long, arching or pendent, forked, gray-green fertile fronds bearing velvety, brownish spore patches beneath. **H** and **S** 3ft (1m). Min. 50ºF (10ºC).

☀ ◑ Z9–12



Selenicereus grandiflorus
(Queen-of-the-night)
Climbing, perennial cactus. Has 7-ribbed, ½–¾in (1–2cm) wide, green stems with yellow spines. White flowers, 7–12in (18–30cm) across, open at night in summer. **H** 10ft (3m), **S** indefinite. Min. 50ºF (10ºC).

☀ ◑ Z12–15

Pereskia aculeata (Barbados gooseberry, Lemon vine)
Fast-growing, deciduous, climbing cactus with broad, glossy leaves. Orange-centered, creamy-white flowers are borne in fall, only on plants over 3ft (1m) high. **H** to 30ft (10m), **S** 15ft (5m). Min. 59ºF (15ºC).

☀ ◑ Z10–12

Cephalocereus senilis
(Old-man cactus)
Very slow-growing, columnar, perennial cactus with a green stem covered in long, white hairs, masking short, white spines. Unlikely to flower in cultivation. **H** 50ft (15m), **S** 6in (15cm). Min. 50ºF (10ºC).

☀ ◑ Z9–11

Cleistocactus strausii (Silver torch)
Fast-growing, columnar, perennial cactus with 3in (8cm) wide stems and short, dense, white spines. Tubular, red flowers are borne in spring on plants over 2ft (60cm) high. **H** 10ft (3m), **S** 3–6ft (1–2m). Min. 41ºF (5ºC).

☀ ◑ Z9–11

Mammillaria hahniana
(Old lady cactus)
Spherical to columnar, perennial cactus with a green stem bearing long, woolly, white hairs. Produces cerise flowers in spring and spherical, red fruits in fall. **H** 16in (40cm), **S** 6in (15cm). Min. 41ºF (5ºC).

☀ ◑ Z9–11

WHITE

Coryphantha cornifera
Spherical to columnar, perennial cactus with angular tubercles, each bearing a curved, dark, central spine and shorter, radial spines. Has funnel-shaped, yellow flowers in summer. **H** 6in (15cm), **S** 4in (10cm). Min. 41ºF (5ºC).

☼ ◊ Z9–11

Gasteria bicolor* var. *liliputana
Perennial succulent that forms rosettes of dark green leaves blotched with white. Flower stems, to 6in (15cm) long, bear spikes of bell-shaped, orange-green flowers in spring. **H** 3in (7cm), **S** 4in (10cm). Min. 41ºF (5ºC).

◐ ◊ Z9–11

Mammillaria geminispina
Clump-forming, perennial cactus. Has a spherical, green stem densely covered with short, white, radial spines and very long, white, central spines. Bears red flowers, ½–¾in (1–2cm) across, in spring. **H** 10in (25cm), **S** 20in (50cm). Min. 41ºF (5ºC).

☼ ◊ Z9–11

Crassula socialis
Spreading, perennial succulent with short, dense rosettes of fleshy, triangular, green leaves, to ½in (1cm) across. Produces clusters of star-shaped, white flowers on 1¼in (3cm) tall stems in spring. **H** 2in (5cm), **S** indefinite. Min. 41ºF (5ºC).

◐ ◊ Z9–11

Haworthia attenuata
Clump-forming, perennial succulent with a basal rosette of triangular, dark green leaves, 1¼in (3cm) long, that have pronounced white dots. Has tubular, white flowers, with spreading petals, from spring to fall. **H** 3in (7cm), **S** 10in (25cm). Min. 41ºF (5ºC).

◐ ◊ Z9–11

Escobaria vivipara
Spherical, perennial cactus with a green stem densely covered with gray spines. Bears funnel-shaped, pink flowers, 1½in (3.5cm) across, in summer. More difficult to grow than many other species in this genus. **H** and **S** 2in (5cm). Min. 41ºF (5ºC).

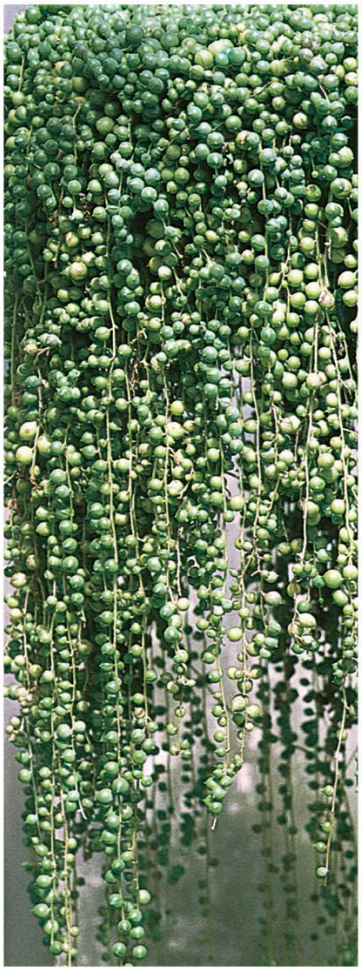
☼ ◊ Z9–11

Gasteria carinata* var. *verrucosa
Clump-forming, perennial succulent producing stiff, dark green leaves, with raised, white dots and incurved edges. Bears spikes of bell-shaped, orange-green flowers in spring. **H** 4in (10cm), **S** 1ft (30cm). Min. 41ºF (5ºC).

◐ ◊ Z9–11

Mammillaria bocasana
(Snowball cactus)
Clump-forming, perennial cactus. Long, white hairs cover a hemispherical stem. Produces cream or rose-pink flowers in summer and red seed pods the following spring–summer. **H** 4in (10cm), **S** 1ft (30cm). Min. 41ºF (5ºC).

☼ ◊ Z9–11

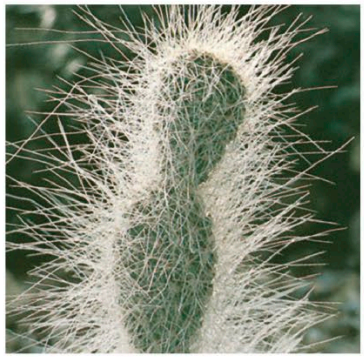


Curio rowleyana (String-of-beads)
Pendent, perennial succulent. Very slender, green stems bear cylindrical, green leaves. Bears heads of fragrant, tubular, white flowers from spring to fall. Suits a hanging pot. **H** 3ft (1m), **S** indefinite. Min. 50ºF (10ºC).

☼ ◊ Z12–15

Agave americana **'Striata'**
Basal-rosetted, perennial succulent. Has sharply pointed, sword-shaped, blue-green leaves with yellow edges. Stem produces white flowers, each 3½in (9cm) long, in spring–summer. Offsets freely. **H** and **S** 6ft (2m).

☼ ◊ Z9–11



Opuntia polyacantha **var. *erinacea***
Bushy, perennial cactus with a green stem, 6in (15cm) long, with flattened segments. Areoles bear numerous, very long, hairlike spines. Produces abundant, saucer-shaped, red or yellow flowers in summer. **H** 20in (50cm), **S** 6ft (2m). Min. 41ºF (5ºC).

☼ ◊ Z7–10 ⓘ

Lithops karasmontana
Egg-shaped, perennial succulent, divided into 2 unequal-sized, gray leaves, that have pink upper surfaces with sunken, darker pink marks. Bears a white flower in late summer or early fall. **H** to 1½in (4cm), **S** 2in (5cm). Min. 41ºF (5ºC).

☼ ◊ Z9–11

Gibbaeum velutinum
Clump-forming, perennial succulent with paired, fingerlike, velvety, bluish gray-green leaves, to 2½in (6cm) long. Produces daisylike, pink, lilac, or white flowers, 2in (5cm) across, in spring. **H** 3in (8cm), **S** 1ft (30cm). Min. 41ºF (5ºC).

☼ ◊ Z9–11

Crassula ovata (Friendship tree, Jade tree, Money tree)
Perennial succulent with a swollen stem crowned by glossy, green leaves, at times red-edged. Bears 5-petaled, white flowers in fall–winter. **H** 12ft (4m), **S** 6ft (2m). Min. 41ºF (5ºC).

☼ ◊ Z11

Echinopsis oxygona
Spherical to columnar, perennial cactus with a 13–15-ribbed, green stem and long spines. Produces tubular, white to lavender flowers, 4in (10cm) across, in spring–summer. **H** and **S** 1ft (30cm). Min. 41ºF (5ºC).

☼ ◊ Z9–11

Gymnocalycium gibbosum
Spherical to columnar, perennial cactus that has a dark green stem with 12–19 rounded ribs, pale yellow spines, darkening with age, and white flowers, to 3in (7cm) long, in summer. **H** 1ft (30cm), **S** 8in (20cm). Min. 41ºF (5ºC).

☼ ◊ Z9–11

Strombocactus disciformis
Very slow-growing, hemispherical, perennial cactus with a gray-green to brown stem set with a spiral of blunt tubercles. Woolly crown has bristlelike spines, which soon fall off, and cream flowers in summer. **H** 1¼in (3cm), **S** 4in (10cm). Min. 50ºF (10ºC).

☼ ◊ Z12–15

Trichodiadema mirabile
Bushy to prostrate, perennial succulent with cylindrical, dark green leaves tipped with dark brown bristles and covered in papillae. Stem tip bears white flowers, 1½in (4cm) across, from spring to fall. **H** 6in (15cm), **S** 1ft (30cm). Min. 41ºF (5ºC).

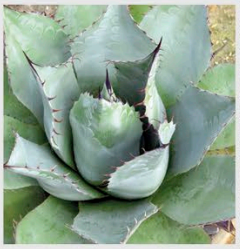
☼ ◊ Z12–15

Furcraea foetida **'Mediopicta'**
Basal-rosetted, perennial succulent with broad, sword-shaped, green leaves, striped with creamy-white, to 8ft (2.5m) long. Produces bell-shaped, green flowers, with white interiors, in summer. **H** 10ft (3m), **S** 15ft (5m). Min. 43ºF (6ºC).

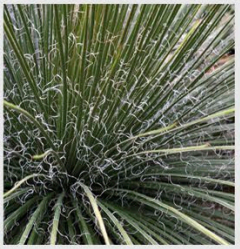
☼ ◊ Z10–11

AGAVES

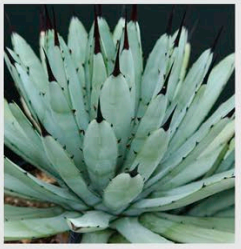
Tough plants originating from the Americas, agaves are able to withstand drought, heat, and full sun. Some species are frost hardy, too. Agaves grab your attention with bold rosettes of thick, sculptured leaves, often of great architectural value. The rosette slowly increases in size over several years before producing a flower spike, sometimes of treelike proportions, so site carefully. Some species die after flowering, but may produce seed, bulbils among the flowers, and offsets around the base of the old rosette. Care should be taken when planting, due to sharp thorns at the end of the leaves.



A. parrasana



A. geminiflora



A. macroacantha

A. stricta

A. parviflora

A. americana 'Marginata'

A. victoriae-reginae

A. filifera

WHITE

Kalanchoe blossfeldiana **'Calandiva'**
Bushy, perennial succulent with ovate to oblong, toothed, glossy, dark green leaves. Clusters of tubular, double, red, orange, pink, purple or white flowers, ¼in (0.5cm) across, of any combination of these colors, are borne year-round. **H** and **S** 1ft (30cm). Min. 50°F (10°C).

☀ ◊ Z11

Echinocereus leucanthus
Clump-forming, tuberous cactus with spined, 6- or 7-ribbed, prostrate stems. In spring, bears often terminal, dark-throated, white flowers, softly streaked purple, with green stigmas. **H** 8in (20cm), **S** 1ft (30cm). Min. 46°F (8°C).

☀ ◊ Z10–11

Epiphyllum laui
Bushy, perennial cactus, usually with strap-shaped, red-tinged, glossy stems, which may also be spiny, cylindrical, or 4-angled. Produces fragrant, white flowers, with brown sepals, in spring–summer. **H** 1ft (30cm), **S** 20in (50cm). Min. 50°F (10°C).

☀ ◊ Z10–12

Espostoa lanata
(Cotton ball, Peruvian old-man cactus)
Very slow-growing, columnar, perennial cactus with a branching, woolly, green stem. Foul-smelling, white flowers are borne in summer, only on plants more than 3ft (1m) high. **H** to 12ft (4m), **S** 6ft (2m). Min. 41°F (5°C).

☀ ◊ Z9–11

Kalanchoe fedtschenkoi **'Variegata'**
Bushy, perennial succulent. Blue-green and cream leaves also color red. Produces a new plantlet in each leaf notch. Bears brownish-pink flowers in late winter. **H** and **S** to 3ft (1m). Min. 50°F (10°C).

☀ ◊ Z11

Mammillaria plumosa
Clump-forming, perennial cactus. Has a spherical, green stem that is completely covered with feathery, white spines. Produces cream flowers in midwinter. Difficult to grow; add calcium to soil. **H** 5in (12cm), **S** 16in (40cm). Min. 34°F (1°C).

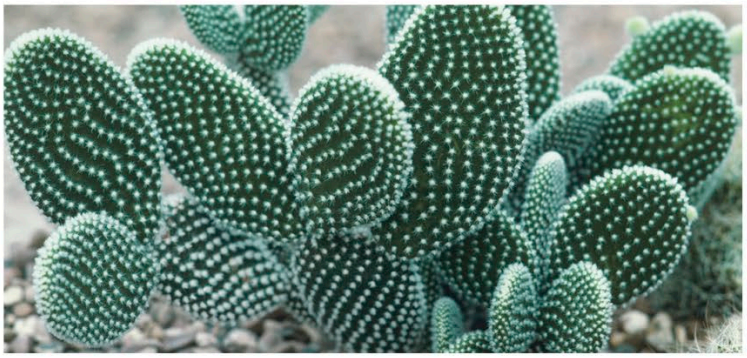
☼ 💧 Z8–12

Neolloydia conoidea
Clump-forming, perennial cactus. Has a columnar, blue-green stem densely covered with white, radial spines and longer, black, central spines. Bears funnel-shaped, purple-violet flowers in summer. **H** 4in (10cm), **S** 6in (15cm). Min. 41°F (5°C).

☼ 💧 Z9–11

Pachycereus pringlei
Slow-growing, columnar, perennial cactus with a branched, bluish-green stem that has 10–15 ribs. Large areoles each have 15–25 black-tipped, white spines. Unlikely to flower in cultivation. **H** 35ft (11m), **S** 10ft (3m). Min. 50°F (10°C).

☼ 💧 Z11



Opuntia microdasys* var. *albispina
Bushy, perennial cactus with green, flattened, ovate segments. Spineless areoles, with slender, barbed, white hairs, are set in diagonal rows. Funnel-shaped, yellow flowers are borne in summer. **H** 2ft (60cm), **S** 1ft (30cm). Min. 37–41°F (3–5°C).

☼ 💧 ⓘ Z11

***Euphorbia tithymaloides* 'Variegata'**
(Redbird flower)
Bushy, perennial succulent with stems angled at each node. Leaves have white or pink marks. Stem tips produce small, greenish flowers in red to yellowish-green bracts in summer. **H** to 10ft (3m), **S** 1ft (30cm). Min. 50°F (10°C).

◐ 💧 ⓘ Z11

Rhipsalis cereuscula (Coral cactus)
Pendent, perennial cactus with 4- or 5-angled or cylindrical, green stems and branches, to 1¼in (3cm) long in whorls. Bears bell-shaped, white flowers on stem tips in winter–spring. **H** 2ft (60cm), **S** 20in (50cm). Min. 50°F (10°C).

◐ 💧 Z11–12

Pilosocereus leucocephalus
Columnar, perennial cactus with a 10–12-ribbed stem and white-haired crown. Bears tubular, pink flowers, with cream anthers, at night in summer, on plants more than 5ft (1.5m) tall. **H** to 20ft (6m), **S** 3ft (1m). Min. 52°F (11°C).

☼ 💧 Z10–12

Disocactus flagelliformis
(Rat's-tail cactus)
Pendent, perennial cactus with pencil-thick, green stems bearing short, golden spines. Produces double, cerise flowers along stems in spring. Good for a hanging basket. **H** 3ft (1m), **S** indefinite. Min. 45-50°F (7–10°C).

◐ 💧 Z11–12

***Rebutia* 'Carnival'**
Clump-forming, spherical, perennial cactus with low, tuberculate ribs bearing areoles of white hairs and thin spines. In spring, bears abundant, funnel-shaped white, pink, salmon, orange, or orange-red flowers around the base. **H** 2in (5cm), **S** 6in (15cm). Min. 41°F (5°C).

☼ 💧 Z11

PINK

***Rebutia* 'Jenny'**
Clump-forming, perennial cactus with low, tuberculate ribs bearing areoles with short, white spines. In spring, produces funnel-shaped flowers, the outer sepals dark pink shading to off-white toward the center. **H** 2in (5cm), **S** 6in (15cm). Min. 41°F (5°C).

☼ ◊Z11

Echinocereus pentalophus
Clump-forming, perennial cactus with spined, green stems, 1¼–1½in (3–4cm) across, that have 4–8 ribs, later rounded. Produces trumpet-shaped, bright pink flowers, paler at the base, to 5in (12cm) across, in spring. **H** 2ft (60cm), **S** 3ft (1m). Min. 41°F (5°C).

☼ ◊Z9–11

Echeveria elegans
Clump-forming, perennial succulent with a basal rosette of broad, fleshy, pale silvery-blue leaves, edged with red. Bears yellow-tipped, pink flowers in summer. Keep dry in winter. Makes a good bedding plant. **H** 2in (5cm), **S** 20in (50cm). Min. 41°F (5°C).

☼ ◊Z9–11

Stenocactus obvallatus
Spherical, perennial cactus with wavy-margined ribs. White areoles each bear 5–12 grayish-brown spines. In spring, produces pale yellow to pale pink flowers, with a purplish-red stripe on each petal. **H** and **S** 3in (8cm). Min. 45°F (7°C).

☼ ◊Z12–15

Hesperaloe parviflora
Basal-rosetted, perennial succulent, often with peeling, white fibers at leaf edges. Flower stems each bear a raceme of bell-shaped, pink to red flowers in summer–fall. **H** 3ft (1m) or more, **S** 6ft (2m). Min. 37°F (3°C).

☼ ◊Z6–11

Mammillaria sempervivi
Slow-growing, spherical, perennial cactus, producing a dark green stem with short, white spines. Has white wool between short, angular tubercles on plants more than 1½in (4cm) high. Bears cerise flowers in spring. **H** and **S** 3in (7cm). Min. 41°F (5°C).

☼ ◊Z9–11

Aptenia cordifolia
Fast-growing, prostrate, perennial succulent with ovate, glossy, green leaves and, in summer, daisylike, bright pink flowers. Ideal for groundcover. **H** 2in (5cm), **S** indefinite. Min. 45°F (7°C).

☼ ◊Z11

Thelocactus bicolor
Spherical to columnar, perennial cactus with an 8–13-ribbed stem. Areoles each have 4 usually flattened, yellow, central spines, or bicolored yellow and red, and numerous shorter, radial spines. Flowers are purple-pink. **H** and **S** 8in (20cm). Min. 45°F (7°C).

☼ ◊Z12–15

Conophytum concordans
Clump-forming, perennial succulent with 2 fleshy, gray-green leaves that are broad, erect, and united for most of their length but have distinctly divided, upper lobes. Pale pink flowers are produced in late summer. **H** 1in (2.5cm), **S** ½in (1cm). Min. 41°F (5°C).

☼ ◊Z11

Lampranthus spectabilis
Spreading, perennial succulent with erect stems and narrow, cylindrical, gray-green leaves. In summer, produces daisylike flowers, cerise with yellow centers or golden-yellow throughout. **H** 1ft (30cm), **S** indefinite. Min. 41°F (5°C).

☼ ◊Z9–11

Echinocereus reichenbachii* var. *baileyi
Columnar, perennial cactus with a slightly branched stem bearing 12–23 ribs and yellowish-white, 1¼in (3cm) long spines. Produces pink flowers with darker bases in spring. **H** 1ft (30cm), **S** 8in (20cm). Min. 45°F (7°C).

☼ ◊Z7–10

Crassula multicava
Bushy, perennial succulent with ovate, gray-green leaves, 3in (8cm) across. Produces numerous clusters of small, star-shaped, pink flowers on elongated stems in spring, followed by small plantlets. **H** 6in (15cm), **S** 3ft (1m). Min. 45°F (7°C).

◑ ◊Z11–12

Crassula schmidtii
Carpeting, perennial succulent with dense rosettes of linear, dark green leaves, pitted and marked, each 1¼–1½in (3–4cm) long. Bears abundant star-shaped, bright pink-red flowers in clusters in winter. **H** 4in (10cm), **S** 1ft (30cm). Min. 45ºF (7ºC).

☀ ◊ Z10–11

Oscularia deltoides
Spreading, perennial succulent. Has chunky, triangular, blue-green leaves, to ½in (1cm) long, with small-toothed, often reddened leaf margins. Fragrant, pink flowers, ½–¾in (1–2cm) wide, are borne in early summer. **H** 6in (15cm), **S** 3ft (1m). Min. 41ºF (5ºC).

☀ ◊ Z9–11

Eriosyce napina
Flattened spherical, perennial cactus with very short, gray spines pressed flat against a greenish-brown stem. Produces white, pink, carmine, or brown flowers, 2in (5cm) across, from the crown in summer. **H** ¾in (2cm), **S** 1½in (3.5cm). Min. 41ºF (5ºC).

☀ ◊ Z11

***Disocactus* 'Gloria'**
Erect, then pendent, perennial cactus. Strap-shaped, flattened, green stems have toothed edges. Produces pinkish-red flowers, 4in (10cm) across, in spring. **H** 1ft (30cm), **S** 3ft (1m). Min. 50ºF (10ºC).

☀ ◊ Z11

Frithia pulchra
Basal-rosetted, perennial succulent with erect, rough, gray leaves, cylindrical with flattened tips. Produces abundant, stemless, daisylike, bright pink flowers, with paler centers, in summer. **H** 1¼in (3cm), **S** 2½in (6cm). Min. 41ºF (5ºC).

☀ ◊ Z8–10

***Disocactus* 'M.A. Jeans'**
Erect, then pendent, perennial cactus. Strap-shaped, flattened, green stems have shallowly toothed edges. In spring, bears deep pink flowers, 3in (8cm) across, with white anthers. **H** 1ft (30cm), **S** 20in (50cm). Min. 50ºF (10ºC).

☀ ◊ Z11

***Kalanchoe* 'Wendy'**
Semierect, perennial succulent with narrowly ovate, glossy, green leaves, 3in (7cm) long. In late winter, bears bell-shaped, pinkish-red flowers, ¾in (2cm) long, with yellow tips. Ideal for a hanging basket. **H** and **S** 1ft (30cm). Min. 50ºF (10ºC).

☀ ◊ Z10–11

Hatiora rosea
Bushy, perennial cactus with slender, 3- or 4-angled, bristly, green stem segments, usually tinged purple, to 2in (5cm) long. Produces abundant, bell-shaped, pink flowers, to 1½in (4cm) across, in spring. **H** and **S** 4in (10cm). Min. 50ºF (10ºC).

☀ ◊ Z10–12

Graptopetalum bellum
Basal-rosetted, perennial succulent with triangular to ovate, gray leaves, 2in (5cm) long. Bears clusters of deep pink to red flowers, ¾in (2cm) across, in spring–summer. **H** 1¼in (3cm), **S** 6in (15cm). Min. 41ºF (5ºC).

☀ ◊ Z9–11

***Disocactus phyllanthoides* 'Deutsche Kaiserin'**
Pendent, epiphytic, perennial cactus with flattened, toothed, glossy, green stems, each 2in (5cm) across. Stem margins each bear pink flowers, to 4in (10cm) across, in spring. **H** 2ft (60cm), **S** 3ft (1m). Min. 50ºF (10ºC).

☀ ◊ Z11

Pereskia grandifolia (Rose cactus)
Deciduous, bushy, perennial cactus with black spines. Single, roselike, pink flowers are produced in summer–fall only on plants more than 1ft (30cm) high. **H** 15ft (5m), **S** 10ft (3m). Min. 59ºF (15ºC).

☀ ◊ Z10–12

PINK

Mammillaria zeilmanniana
(Rose pincushion)
Clump-forming, perennial cactus with a spherical, green stem that has hooked spines and bears a ring of deep pink to purple flowers in spring. **H** 6in (15cm), **S** 1ft (30cm). Min. 10ºC (50ºF).

☼ ◊ Z9–11

Parodia mueller-melchersii
Columnar, perennial cactus. Areoles each have about 15 radial spines and 2 upward- or downward-pointing, central spines. Bears cream-centered, pink flowers in summer. **H** 4in (10cm), **S** 2in (5cm). Min. 50ºF (10ºC).

◐ ◊ Z11

Oroya peruviana
Spherical, perennial cactus with a much-ribbed stem covered in yellow spines, ⅝in (1.5cm) long, with darker bases. Pink flowers, with yellow bases, open in spring–summer. **H** 10in (25cm), **S** 8in (20cm). Min. 50ºF (10ºC).

☼ ◊ Z9–11

***Schlumbergera* 'Gold Charm'**
Erect, then pendent, perennial cactus. Has flattened, oblong, green stem segments with toothed margins. Yellow flowers, borne in early fall, turn pinkish-orange in winter. **H** 6in (15cm), **S** 1ft (30cm). Min. 50ºF (10ºC).

◐ ◊ Z13–15

***Curio articulata* 'Variegatus'**
Deciduous, spreading, perennial succulent with gray-marked stems. Produces cream- and pink-marked, blue-green leaves in summer and yellow flower heads from fall to spring. **H** 2ft (60cm), **S** indefinite. Min. 45ºF (7ºC).

☼ ◊ Z13–15 ⓘ

Adenium obesum
Treelike, perennial succulent with a fleshy, tapering, green trunk and stems crowned by ovate, glossy, green leaves, dull green beneath. Produces funnel-shaped, pink to pinkish-red flowers, white inside, in summer. **H** 6ft (2m), **S** 20in (50cm). Min. 59ºF (15ºC).

◐ ◊ ⓘ Z11

RED

Echinopsis chamaecereus
(Peanut cactus)
Clump-forming, perennial cactus with spined stems, initially erect, then prostrate. Bears funnel-shaped, orange-red flowers in late spring. **H** 4in (10cm), **S** indefinite. Min. 37ºF (3ºC).

☼ ◊ Z11

Rebutia minuscula
Clump-forming, perennial cactus with a tuberculate, dark green stem. Bears prominent, white areoles with very short, white spines. Trumpet-shaped, bright red flowers, to 2in (5cm) across, are borne at stem base in spring. **H** 2in (5cm), **S** 8in (20cm). Min. 41ºF (5ºC).

☼ ◊ Z9–11

Ferocactus hamatacanthus
Slow-growing, spherical to columnar, perennial cactus with a 13-ribbed stem that bears hooked, red spines, to 5in (12cm) long. Produces yellow blooms in summer, then spherical, red fruits. **H** and **S** 2ft (60cm). Min. 41ºF (5ºC).

☼ ◊ Z9–11

Echeveria secunda
Clump-forming, perennial succulent with short stems each crowned by a rosette of broad, fleshy, light green to gray leaves, reddened near the tips. Bears cup-shaped, red-and-yellow flowers in spring–summer. **H** 1½in (4cm), **S** 1ft (30cm). Min. 41ºF (5ºC).

☼ ◊ Z9–11

Parodia haselbergii* subsp. *haselbergii
(Scarlet ball cactus)
Slow-growing, perennial cactus with a stem covered in white spines. Slightly sunken crown bears red flowers, with yellow stigmas, in spring. **H** 4in (10cm), **S** 10in (25cm). Min. 50ºF (10ºC).

◐ ◊ Z9–11

Parodia nivosa
Ovoid, perennial cactus that has a much-ribbed, green stem with stiff, white spines, each ½–¾in (1–2cm) long. Has a white, woolly crown and bright red flowers, to 2in (5cm) across, in summer. **H** to 6in (15cm), **S** 4in (10cm). Min. 50ºF (10ºC).

☼ ◊ Z9–11

Cyphostemma juttae
Perennial succulent. Swollen stem has peeling bark and deciduous, scandent branches with broad leaves. Bears inconspicuous, yellow-green flowers in summer. Green fruits turn yellow or red. **H** and **S** 6ft (2m). Min. 50ºF (10ºC).

☼ ◊ Z9–11

Stenocactus coptonogonus
Spherical, perennial cactus. White areoles each have 3–5 flat, upward-curving, pale brownish-red spines. Bears purple to white flowers, with pink-purple or violet-purple stripes, in spring. **H** 4in (10cm), **S** 6in (16cm). Min. 45ºF (7ºC).

☼ ◊ Z12–15

Rebutia deminuta
Clump-forming, perennial cactus with a spherical, spined, green stem, to 1½in (4cm) across, becoming columnar with age. Bears abundant, slender-tubed, orange-red flowers at base in late spring. **H** 4in (10cm), **S** 8in (20cm). Min. 41ºF (5ºC).

☼ ◊ Z9–11

***Kalanchoe* 'Tessa'**
Prostrate to pendent, perennial succulent with narrowly ovate, green leaves, 1¼in (3cm) long. Bears tubular, orange-red flowers, ¾in (2cm) long, in late winter. **H** 1ft (30cm), **S** 2ft (60cm). Min. 50ºF (10ºC).

◐ ◊ Z9–11

Schlumbergera truncata
(Crab cactus, Lobster cactus)
Erect, then pendent, perennial cactus. Oblong stem segments have toothed margins. Bears purple-red flowers in early fall and winter. **H** 6in (15cm), **S** 1ft (30cm). Min. 50ºF (10ºC).

◐ ◊ Z13–15

Kalanchoe blossfeldiana
Bushy, perennial succulent with ovate to oblong, toothed, glossy, green leaves. Produces clusters of yellow, orange, pink, red or purple flowers, year-round. Makes an excellent house plant. **H** and **S** 1ft (30cm). Min. 50ºF (10ºC).

◐ ◊ Z11

***Gymnocalycium mihanovichii* 'Red Head'**
Perennial cactus with a red stem, 8 angular ribs and curved spines. Must be grafted onto any fast-growing stock as it contains no chlorophyll. Bears pink flowers in spring–summer. **H** and **S** as per graft stock. Min. 50ºF (10ºC).

☼ ◊ Z9–11

Rebutia steinbachii* subsp. *tiraquensis
Variable, perennial cactus with a green stem. Elongated areoles bear spines of gold or bicolored red and white. Bears dark pink- or orange-red flowers in spring. **H** 6in (15cm), **S** 4in (10cm). Min. 41ºF (5ºC).

☼ ◊ Z9–11

Hatiora gaertneri (Easter cactus)
Bushy, perennial cactus with flat, oblong, glossy, green stem segments, each to 2in (5cm) long, often tinged red at the edges. Segment ends each bear orange-red flowers in spring. **H** 6in (15cm), **S** 13in (20cm). Min. 55ºF (13ºC).

◐ ◊ Z11

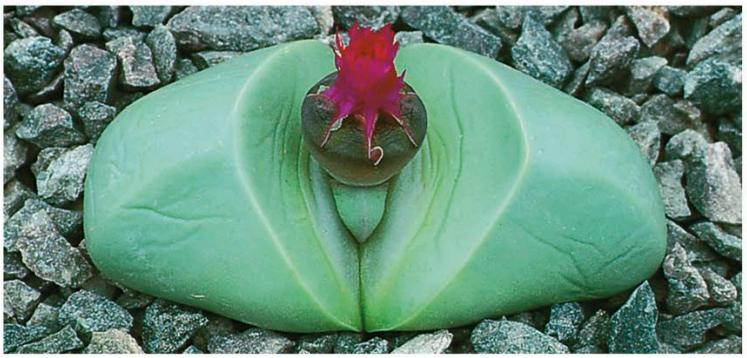
PURPLE

***Schlumbergera* 'Bristol Beauty'**
Erect, then pendent, perennial cactus with flattened, green stem segments with toothed margins. Bears reddish-purple flowers, with silvery-white tubes, in early fall and winter.
H 6in (15cm), **S** 1ft (30cm).
Min. 50°F (10°C).

☼ ◊ Z13–15

Orbea variegata (Star flower, Toad cactus)
Clump-forming, branching, perennial succulent with 4-angled, indented stems. Flowers, variable in color and blotched yellow, purple- or red-brown, are borne in summer–fall. **H** to 4in (10cm), **S** indefinite. Min. 41°F (5°C).

☼ ◊ Z11

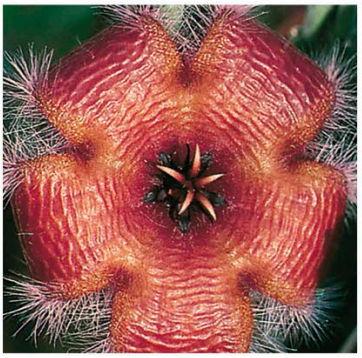


Argyroderma delaetii
Prostrate, egg-shaped, perennial succulent with 2 very fleshy, silvery-green leaves, between which daisylike, pink-purple flowers, 2in (5cm) across, are produced in late summer. **H** 1½in (3cm), **S** 2in (5cm). Min. 41°F (5°C).

☼ ◊ Z9–11

Huernia macrocarpa
Clump-forming, perennial succulent with finger-shaped, 4- or 5-sided, green stems. Produces short-lived, deciduous leaves and, in fall, bell-shaped, white-haired, dark purple flowers with recurved petal tips. **H** and **S** 4in (10cm).
Min. 52°F (11°C).

☼ ◊ Z11–12



Stapelia grandiflora
Clump-forming, perennial succulent with 4-angled, hairy, toothed, green stems. In summer-fall, produces star-shaped, purple-brown flowers, to 4in (10cm) across, ridged with white or purple hairs. **H** to 8in (20cm), **S** indefinite. Min. 52°F (11°C).

☼ ◊ Z13–15

BLUE

Crassula deceptor
Slow-growing, clump-forming, perennial succulent with branching stems surrounded by fleshy, gray leaves set in 4 rows. Each leaf has minute lines around raised dots. Bears insignificant flowers in spring. **H** and **S** 4in (10cm).
Min. 41°F (5°C).

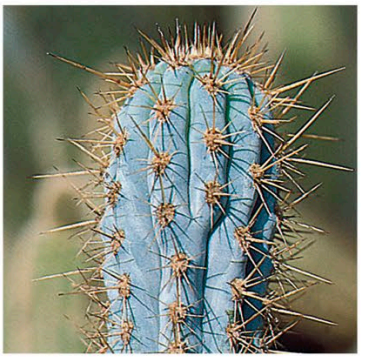
☼ ◊ Z9–11

Opuntia robusta
Bushy, perennial cactus. Silvery-blue stem has flattened, ovate segments with either no spines or 8–12 white ones, to 2in (5cm) long, per areole. Saucer-shaped, yellow flowers, 3in (7cm) across, are produced in spring-summer. **H** and **S** 15ft (5m). Min. 41°F (5°C).

☼ ◊ ! Z9–11

Aloinopsis schooneesii
Dwarf, mounded, perennial succulent with tuberous roots and fleshy, almost spherical, blue-green leaves arranged tightly in tufts. Produces flattish, yellow flowers in winter-spring. **H** 1½in (3cm), **S** to 3in (7cm). Min. 45°F (7°C).

☼ ◊ Z10–11



Browningia hertlingiana
Slow-growing, columnar, perennial cactus with a silvery-blue stem, golden spines, and tufted areoles. Nocturnal, white flowers are produced in summer, only on plants more than 3ft (1m) high.
H 25ft (8m), **S** 12ft (4m). Min. 45°F (7°C).

☼ ◊ Z10–11

Cereus hildmannianus
Columnar, perennial cactus. Has a branching, silvery-blue stem and golden spines on 4–8 indented ribs. Bears cup-shaped, white flowers, 4in (10cm) across, at night in summer, and pear-shaped, red fruits. **H** 15ft (5m), **S** 12ft (4m). Min. 45°F (7°C).

☼ ◊ Z11

Cereus hankeanus
Columnar, perennial cactus with a branching, blue-green stem bearing dark spines on 4–7 prominent ribs. Produces cup-shaped, white flowers, 10in (25cm) long, at night in summer, followed by red fruits. **H** 22ft (7m), **S** 10ft (3m). Min. 45°F (7°C).

☼ ◊ Z11

Copiapoa cinerea
Very slow-growing, clump-forming, perennial cactus. Blue-green stem bears up to 25 ribs and black spines. Has a woolly, white-gray crown and, on plants over 4in (10cm) across, yellow flowers in spring-summer. **H** 20in (50cm), **S** 6ft (2m). Min. 50ºF (10ºC).

☀ 💧Z11–12

Echinopsis lageniformis
Columnar, perennial cactus with 4–8-ribbed stems branching at base. Areoles each produce up to 6 spines. Scented, funnel-shaped, white flowers open at night in summer. **H** to 15ft (5m), **S** 3ft (1m). Min. 50ºF (10ºC).

☀ 💧Z10–11

Myrtillocactus geometrizans
(Blue candle)
Columnar, perennial cactus with a branched, 5- or 6-ribbed, blue-green stem. Bears short, black spines, on plants more than 1ft (30cm) tall, and white flowers at night in summer. **H** to 12ft (4m), **S** 6ft (2m). Min. 54ºF (12ºC).

☀ 💧Z10–11

Aeonium haworthii (Pinwheel)
Bushy, perennial succulent. Freely branching stems bear rosettes, 5in (12cm) across, of blue-green leaves, often with red margins. Bears a terminal spike of star-shaped, pink-tinged, pale yellow flowers in spring. **H** 2ft (60cm), **S** 3ft (1m). Min. 41ºF (5ºC).

⛅ 💧Z9–11

Agave parryi
Basal-rosetted, perennial succulent with stiff, broad, gray-green leaves, each to 1ft (30cm) long with a solitary dark spine at its pointed tip. Flower stem, to 12ft (4m) long, bears creamy-yellow flowers in summer. **H** 20in (50cm), **S** 3ft (1m). Min. 41ºF (5ºC).

☀ 💧Z9–11

Graptopetalum paraguayense
(Mother-of-pearl plant)
Clump-forming, perennial succulent with a basal rosette, 6in (15cm) across, of gray-green leaves, often tinged pink. Bears star-shaped, yellow-and-red flowers in summer. **H** 4in (10cm), **S** 3ft (1m). Min. 41ºF (5ºC).

⛅ 💧Z9–11

Agave attenuata
Perennial succulent with a thick stem crowned by a rosette of sword-shaped, spineless, pale green leaves. Arching flower stem, to 5ft (1.5m) long, is densely covered with yellow flowers in spring-summer. **H** 3ft (1m), **S** 6ft (2m). Min. 41ºF (5ºC).

☀ 💧Z9–11

Lithops marmorata
Egg-shaped, perennial succulent, divided into 2 unequal-sized, swollen, pale gray leaves with dark gray marks on convex, upper surfaces. Bears a white flower in late summer or early fall. **H** ¾–1¼in (2–3cm), **S** 2in (5cm). Min. 41ºF (5ºC).

☀ 💧Z9–11

Crassula perfoliata* var. *minor
(Airplane propeller)
Bushy, perennial succulent that branches freely. Long leaves each twist like a propeller. Bears large clusters of fragrant, red flowers in late summer. **H** and **S** 3ft (1m). Min. 45ºF (7ºC).

⛅ 💧Z10–11

GRAY

Leuchtenbergia principis
Basal-rosetted, perennial cactus with narrow, angular, dull gray-green tubercles, each 4in (10cm) long and crowned by papery spines to 4in (10cm) long. Crown bears yellow flowers, to 3in (7cm) across, in summer. **H** and **S** 1ft (30cm). Min. 43ºF (6ºC).

☼ ◊Z11–12

Dudleya pulverulenta
Basal-rosetted, perennial succulent with strap-shaped, pointed, silvery-gray leaves. Bears abundant star-shaped, red flowers in spring–summer. **H** 2ft (60cm), **S** 1ft (30cm). Min. 45ºF (7ºC).

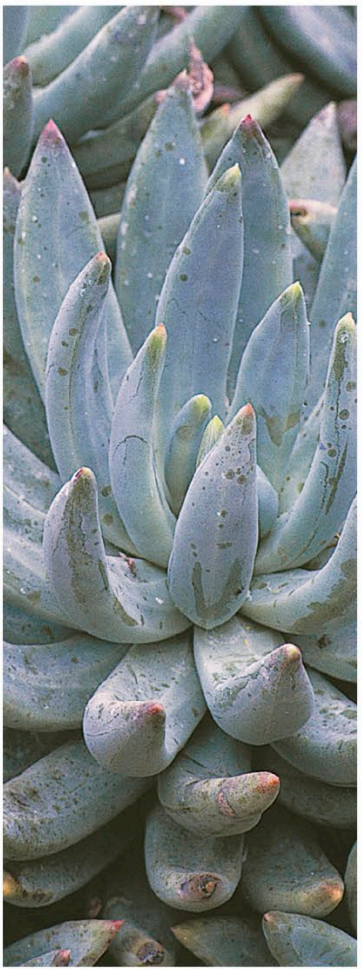
☼ ◊Z11–12

Eriosyce villosa
Clump-forming, perennial cactus with a branched, green to dark gray-green stem. Has dense, sometimes curved, gray spines, 1¼in (3cm) long. Produces tubular, pink or white flowers in spring or fall. **H** 6in (15cm), **S** 4in (10cm). Min. 46ºF (8ºC).

☼ ◊Z11

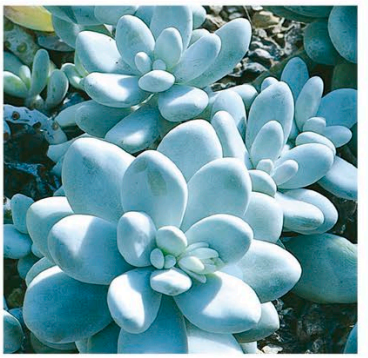
Crassula arborescens
(Silver jade plant)
Perennial succulent with a thick, robust stem crowned by branches bearing rounded, silvery-blue leaves, often with red edges. Bears 5-petaled, pink flowers in fall–winter. **H** 12ft (4m), **S** 6ft (2m). Min. 45ºF (7ºC).

☼ ◊Z11



x *Pachyveria glauca*
Clump-forming, perennial succulent with a dense, basal rosette of fleshy, incurved, ovate, silvery-blue leaves, to 2½in (6cm) long, with darker marks. Bears star-shaped, yellow flowers, each with a red tip, in spring. **H** and **S** 1ft (30cm). Min. 45ºF (7ºC).

☼ ◊Z10–11



Pachyphytum oviferum (Moonstones, Sugared-almond plum)
Clump-forming, perennial succulent with a basal rosette of ovate, pinkish-blue leaves. Stem bears 10–15 bell-shaped flowers, with powder-blue calyces and orange-red petals, in spring. **H** 4in (10cm), **S** 1ft (30cm). Min. 45ºF (7ºC).

☼ ◊Z11–12

Ceropegia linearis* subsp. *woodii
(Heart vine, Rosary vine, String-of-hearts)
Semievergreen, trailing, succulent subshrub with tuberous roots. Leaves redden in sun. Bears hairy, pinkish-green flowers from spring to fall. **H** 3ft (1m), **S** indefinite. Min. 45ºF (7ºC).

◐ ◊Z10–11

Kalanchoe tomentosa (Panda plant, Pussy ears)
Bushy, perennial succulent with thick, ovate, gray leaves, covered with velvety bristles and often edged with brown at tips. Produces yellowish-purple flowers in winter. **H** 20in (50cm), **S** 1ft (30cm). Min. 50ºF (10ºC).

☼ ◊Z11

GREEN

Beschorneria yuccoides
Clump-forming, perennial succulent with a basal rosette of up to 20 rough, grayish-green leaves, to 3ft (1m) long and 2in (5cm) across. Produces pendent, tubular, bright red flowers in summer in spikes over 6ft (2m) tall. **H** 3ft (1m), **S** 10ft (3m).

☼ ◊Z8–11

Maihuenia poeppigii
Slow-growing, clump-forming, perennial cactus. Has a cylindrical, branched, spiny, green-brown stem. Most branches produce a spike of cylindrical, green leaves at the tip, with a funnel-shaped, yellow flower in summer. **H** 2½in (6cm), **S** 1ft (30cm).

☼ ◊Z11

Frailea pygmaea
Columnar, perennial cactus with a much-ribbed, dark green stem bearing white to light brown spines. Buds, which rarely open to flattish, yellow flowers in summer, become tufts of spherical, spiny seed pods. **H** to 2in (5cm), **S** ¾in (2cm). Min. 41ºF (5ºC).

◐ ◊Z9–11

Aeonium tabuliforme
Prostrate, almost stemless, short-lived, perennial succulent with a basal rosette, to 1ft (30cm) across, like a flat, bright green plate. Produces star-shaped, yellow flowers in spring, then dies. Propagate from seed. **H** 2in (5cm), **S** 1ft (30cm). Min. 41ºF (5ºC).

☀ Z9–11

Mammillaria microhelia
Columnar, perennial cactus with a green stem, ⅝in (5cm) across, bearing cream or brown spines, discoloring with age. Produces yellow or pink flowers, ⅝in (5cm) across, in spring. Offsets slowly with age. **H** 8in (20cm), **S** 16in (40cm). Min. 41ºF (5ºC).

☀ 💧 Z9–11

Argyroderma pearsonii
Prostrate, egg-shaped, perennial succulent. A united pair of very fleshy, silvery-gray leaves has a deep fissure in which a red flower, 1¼in (3cm) across, is produced in summer. **H** 1¼in (3cm), **S** 2in (5cm). Min. 41ºF (5ºC).

☀ 💧 Z9–11

Lithops lesliei* var. *albinica
Egg-shaped, perennial succulent, divided into 2 unequal-sized leaves; convex, pale green, upper surfaces have dark green and yellow marks. Bears a white flower in late summer or early fall. **H** ¾–1¼in (2–3cm), **S** 2in (5cm). Min. 41ºF (5ºC).

☀ 💧 Z9–11

Schwantesia ruedebuschii
Mat-forming, perennial succulent with cylindrical, bluish-green leaves, 1–2in (3–5cm) long, with expanded tips. Leaf edges each produce 3–7 minute, blue teeth with brown tips. Produces yellow flowers in summer. **H** 2in (5cm), **S** 8in (20cm). Min. 50ºF (10ºC).

☀ 💧 Z12–15

Echinopsis marsoneri
Columnar, perennial cactus with a 20–25-ribbed, bluish- to dark green stem that has yellow, radial spines with longer, darker, central ones. In summer, produces yellow flowers, 3in (7cm) across, with red throats. **H** 1ft (30cm), **S** 6in (15cm). Min. 41ºF (5ºC).

☀ 💧 Z11

Echinopsis pentlandii
Clump-forming or solitary, variable, perennial cactus with a 10–20-ribbed stem and 6–20 spined aeroles. Bears white, pink, purple, or orange flowers, with paler throats, in summer. **H** 3in (8cm), **S** 4in (10cm). Min. 41ºF (5ºC).

☀ 💧 Z9–11

Argyroderma fissum
Clump-forming, perennial succulent with finger-shaped, fleshy leaves, 2–4in (5–10cm) long and often reddish at the tip. Produces light red flowers between leaves in summer. **H** 6in (15cm), **S** 4in (10cm). Min. 41ºF (5ºC).

☀ 💧 Z9–11

Lithops dorotheae
Egg-shaped, perennial succulent, divided into 2 unequal-sized leaves, pale pink-yellow to green with darker areas and red marks on upper surfaces. Produces a daisylike, yellow flower in summer or fall. **H** ¾–1¼in (2–3cm), **S** 2in (5cm). Min. 41ºF (5ºC).

☀ 💧 Z9–11

Pachyphytum compactum
Clump-forming, perennial succulent with a basal rosette of green leaves, each narrowing to a blunt point, with angular, paler edges. Stems each bear 3–10 flowers with green to pink calyces and orange petals in spring. **H** 6in (15cm), **S** indefinite. Min. 41ºF (5ºC).

☀ 💧 Z9–11

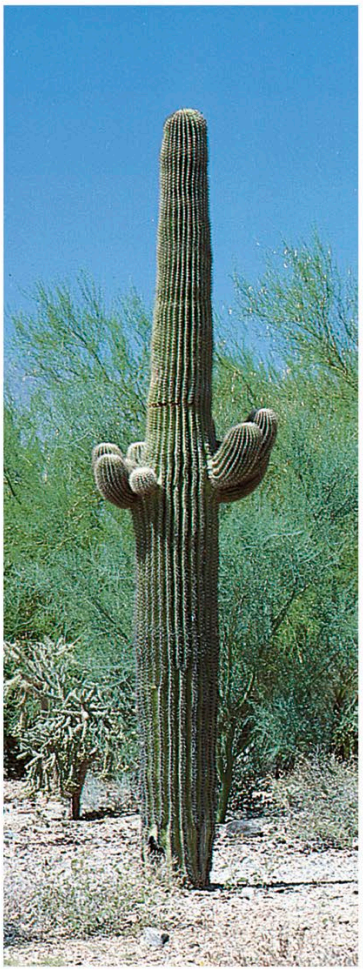
Echinopsis backebergii
Clump-forming, almost spherical, perennial cactus with a 10–15-ribbed, spined, dark green stem. Produces funnel-shaped, pink, red, or purple flowers, with paler throats, in summer. **H** 4in (10cm), **S** 6in (15cm). Min. 41ºF (5ºC).

☀ 💧 Z9–11

Haworthia arachnoidea
Slow-growing, clump-forming, perennial succulent with a basal rosette of triangular leaves, with soft, white teeth along the margins. Produces white flowers from spring to fall. **H** 2in (5cm), **S** 4in (10cm). Min. 43ºF (6ºC).

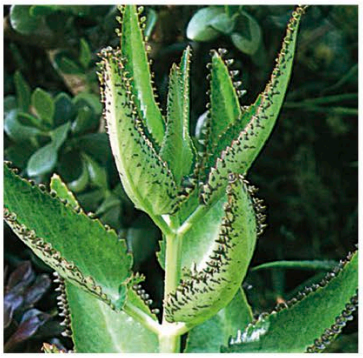
☀ 💧 Z9–11

GREEN



Carnegiea gigantea (Saguaro cactus)
Very slow-growing, perennial cactus with a thick, 12–24-ribbed, spiny, green stem. Tends to branch and bears short, funnel-shaped, fleshy, white flowers at stem tips in summer, only when more than 12ft (4m) high. **H** to 40ft (12m), **S** 10ft (3m). Min. 50ºF (10ºC).

☼ ◊ Z11–12



Kalanchoe daigremontiana
(Mexican hat plant)
Erect, perennial succulent with a stem bearing fleshy, boat-shaped, toothed leaves. Produces a plantlet in each leaf notch. Umbels of pink flowers are borne at stem tops in winter. **H** to 3ft (1m), **S** 1ft (30cm). Min. 50ºF (10ºC).

☼ ◊ Z11

Adromischus maculatus
Clump-forming, perennial succulent with rounded, glossy, green leaves with purple marks. Leaf tips are often wavy. Produces tubular, purplish-white flowers, on a 1ft (30cm) tall stem, in summer. **H** 2½in (6cm), **S** 4–6in (10–15cm). Min. 45ºF (7ºC).

◐ ◊ Z10–11

Echinopsis spachiana (Torch cactus)
Clump-forming, perennial cactus with glossy, green stems bearing 10–15 ribs and pale golden spines. Fragrant, funnel-shaped, white flowers open at night in summer. **H** and **S** 6ft (2m). Min. 41ºF (5ºC).

☼ ◊ Z9–11

Echinopsis candicans
Clump-forming, branching, perennial cactus with up to 11 ribs. Areoles each have 10–15 radial spines and 4 central ones. Fragrant, funnel-shaped, white flowers open at night in summer. **H** 3ft (1m), **S** indefinite. Min. 41ºF (5ºC).

☼ ◊ Z9–11

Echinocereus schmollii
(Lamb's-tail cactus)
Erect to prostrate, tuberous cactus with 8–10-ribbed, purplish-green stems and mostly white spines. Pinkish-purple flowers are borne from spring–summer. **H** and **S** 1ft (30cm). Min. 46ºF (8ºC).

☼ ◊ Z11

Aloe vera
Clump-forming, perennial succulent with basal rosettes of tapering, thick leaves, mottled green, later gray-green. Flower stems bear bell-shaped, yellow flowers in summer. Propagate by offsets as plant is sterile. **H** 2ft (60cm), **S** indefinite. Min. 50ºF (10ºC).

☼ ◊ Z10–11 ⓘ

Haworthia truncata
Clump-forming, perennial succulent with a basal fan of broad, erect, rough, blue-gray leaves with pale gray lines and flat ends. Produces small, tubular, white flowers, with spreading petals, from spring to fall. **H** ¾in (2cm), **S** 4in (10cm). Min. 41ºF (5ºC).

◐ ◊ Z9–11

Dioscorea elephantipes
(Elephant's foot)
Very slow-growing, deciduous, perennial succulent with a domed, woody trunk, annual, climbing stems and yellow flowers in fall. **H** 20in (50cm), **S** 3ft (1m). Min. 50ºF (10ºC).

☼ ◊ Z8–10

Lophophora williamsii
(Dumpling cactus, Mescal button)
Very slow-growing, clump-forming, perennial cactus with an 8-ribbed, blue-green stem. Abundant pink flowers are borne in summer on plants more than 1¼in (3cm) high. **H** 2in (5cm), **S** 3in (8cm). Min. 41ºF (5ºC).

☼ ◊ Z9–11

Pachycereus schottii
Columnar, perennial cactus, branching with age. Olive- to dark green stem, covered with small, white spines, bears 4–15 ribs. Funnel-shaped, pink flowers are produced at night in summer. **H** 22ft (7m), **S** 6ft (2m). Min. 50ºF (10ºC).

☼ ◊ Z10–11

Rhipsalis floccosa* var. *tucumanensis
Pendent, perennial cactus with cylindrical, green stems, to ½in (1cm) across, branching less than many other *Rhipsalis* species. Bears abundant very pale pink flowers in early summer, then pinkish-white fruits. **H** 3ft (1m), **S** 20in (50cm). Min. 50ºF (10ºC).

◐ ◊ Z10–11

Oreocereus celsianus
(Old man of the Andes)
Slow-growing, perennial cactus. Has heavy and wispy spines. Mature plants bear solitary, pale purplish-pink flowers in summer. **H** 3ft (1m), **S** 1ft (30cm). Min. 41ºF (5ºC).

☼ ◊ Z9–11

Epithelantha micromeris
Slow-growing, spherical, perennial cactus with a green stem completely obscured by close-set areoles bearing tiny, white spines. Bears funnel-shaped, pale pinkish-red flowers, ¼in (0.5cm) across, on a woolly crown in summer. **H** and **S** 1½in (4cm). Min. 50ºF (10ºC).

☼ ◊ Z10–11

Duvalia corderoyi
Clump-forming, perennial succulent. Has a prostrate, leafless stem with 6 often purple, indistinct ribs. Bears star-shaped, dull green flowers, ½in (1cm) across and covered in purple hairs, in summer–fall. **H** 2in (5cm), **S** 2ft (60cm). Min. 50ºF (10ºC).

◐ ◊ Z10–11

Euphorbia obesa (Living baseball)
Spherical, perennial succulent. Spineless, dark green stem, often checkered light green, has 8 low ribs. Crown bears rounded heads of cupped, yellow flowers in summer. **H** 5in (12cm), **S** 6in (15cm). Min. 50ºF (10ºC).

☼ ◊ ⓘ Z10–11

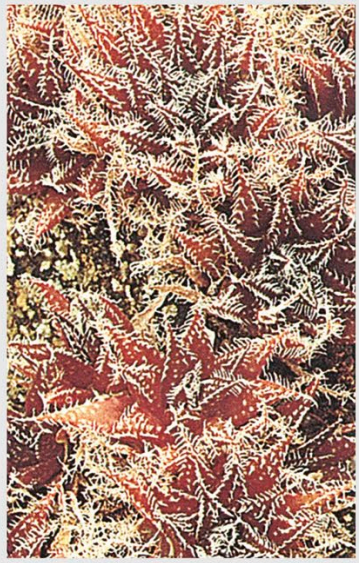
ALOES

Aloes are abundant in Mediterranean and African gardens. There is a huge range of species and hybrids, providing a kaleidoscope of growth forms, flowers, and leaf variegation. Unlike agaves, aloes do not die after flowering, but gradually produce a trunk, becoming shrubs or small trees. Aloes typically produce their leaves singly, and the center of the rosette is usually hollow, reminiscent of a bromeliad. A few species, such as *A. aristata* are frost hardy, and can be grown in rock gardens or at the base of a south-facing wall.

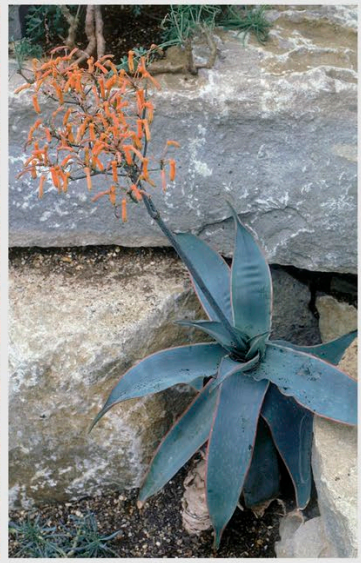
***A. arborescens* 'Variegata'** ⓘ

A. ferox ⓘ

A. hemmingii ⓘ

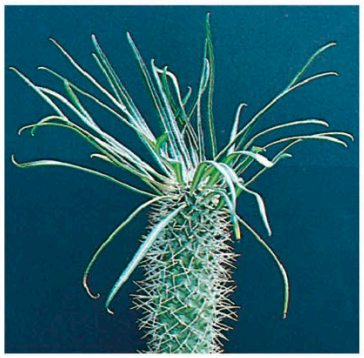


A. haworthioides ⓘ



A. striata ⓘ

GREEN



Pachypodium lamerei
Treelike, perennial succulent with a spiny, pale green stem crowned by linear leaves. Bears fragrant, trumpet-shaped, creamy-white flowers in summer, on plants more than 5ft (1.5m) tall. Stems branch after flowering. **H** 20ft (6m), **S** 6ft (2m). Min. 59ºF (15ºC).

☼ ◊Z11–12

Epiphyllum anguliger
(Fishbone cactus)
Erect, then pendent, perennial cactus. Has strap-shaped, flattened, green stems with heavily indented margins. Produces tubular, white flowers, 4in (10cm) across, in summer. **H** 3ft (1m), **S** 16in (40cm). Min. 52ºF (11ºC).

☼ ◊Z11

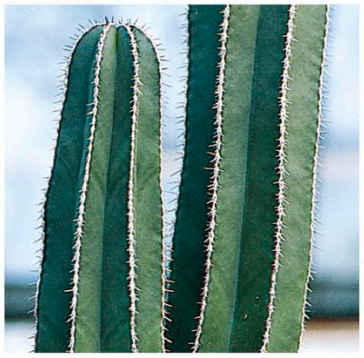
YELLOW

Opuntia humifusa
Prostrate, perennial cactus. Areoles bear up to 3 spines, 1¼in (3cm) long. Has flat, rounded to ovate, purple-tinged, dark green stem segments, 3–7in (7–18cm) long, and yellow flowers, 3in (8cm) across, in spring–summer. Keep dry in winter. **H** 6in (15cm), **S** 3ft (1m). Min. 41ºF (5ºC).

☼ ◊Z11 ⓘ

Astrophytum myriostigma
(Bishop's cap)
Slow-growing, spherical to slightly elongated, perennial cactus. Fleshy stem has 4–6 ribs and is flecked with tiny tufts of white spines. Bears yellow flowers in summer. **H** 1ft (30cm), **S** 8in (20cm). Min. 41ºF (5ºC).

☼ ◊Z9–11



Pachycereus marginatus
(Organ-pipe cactus)
Columnar, perennial cactus with a 5- or 6-ribbed, branching, stem. Areoles bear minute spines. Produces funnel-shaped, white flowers in summer. **H** 22ft (7m), **S** 10ft (3m). Min. 52ºF (11ºC).

☼ ◊Z10–11

Neobuxbaumia euphorbioides
Columnar, perennial cactus. Has gray-green to dark green stems, 4in (10cm) across, with 8–10 ribs and 1 or 2 black spines per areole. Funnel-shaped, wine-red flowers are borne in summer. **H** 10ft (3m), **S** 3ft (1m). Min. 59ºF (15ºC).

☼ ◊Z11–12

Conophytum bilobum
Slow-growing, clump-forming, perennial succulent with 2-lobed, fleshy, green leaves, 1½in (4cm) long, ¾in (2cm) across. Bears flared, yellow flowers, 1¼in (3cm) across, in fall. **H** 1½in (4cm), **S** 6in (15cm). Min. 39ºF (4ºC).

☼ ◊Z9–11

Ferocactus cylindraceus
Slow-growing, columnar, perennial cactus, spherical when young. Green, 10–20-ribbed stem has large, hooked, red or yellow spines. Funnel-shaped, yellow flowers form in summer on plants 10in (25cm) across. **H** 10ft (3m), **S** 32in (80cm). Min. 41ºF (5ºC).

☼ ◊Z9–11

Caralluma joannis
Clump-forming, perennial succulent with blue-gray stems and rudimentary leaves on stem angles. Bears clusters of star-shaped, purple flowers, with short, fine hairs on petal tips, in late summer near stem tips. **H** 8in (20cm), **S** 3ft (1m). Min. 52ºF (11ºC).

☼ ◊Z10–11

Melocactus intortus (Melon cactus)
Flattened spherical, perennial cactus. Has an 18–20-ribbed stem with yellow-brown spines. Crown matures to a white column with brown spines. Bears pink flowers in summer. **H** 8in (20cm), **S** 10in (25cm). Min. 59ºF (15ºC).

☼ ◊Z11–12

Mammillaria elongata
(Gold lace cactus)
Clump-forming, perennial cactus. Has columnar, green stems, 1¼in (3cm) across, densely covered with yellow, golden or brown spines. Bears cream flowers in summer. **H** 6in (15cm), **S** 1ft (30cm). Min. 41ºF (5ºC).

☼ ◊Z9–11

Rhombophyllum rhomboideum
Clump-forming, perennial succulent. Linear, glossy, gray-green leaves have expanded middles and white margins. Stems, ¾–2in (2–5cm) long, bear 3–7 yellow flowers, to 1½in (4cm) across, in summer. **H** 2in (5cm), **S** 6in (15cm). Min. 41ºF (5ºC).

☼ ◊Z9–11

Astrophytum ornatum
Spherical, perennial cactus with a very fleshy, 8-ribbed stem. Crown of each rib bears 2–4½in (5–11cm) long spines on each raised areole. Bears yellow flowers, 3in (8cm) across, in summer. **H** 6in (15cm), **S** 5in (12cm). Min. 41ºF (5ºC).

☼ ◊Z9–11

Echinopsis aurea
Columnar, perennial cactus. Has narrow, much-ribbed, green stems covered with pale, radial spines often surrounded by 1–3 very stout, central spines, to 1in (2.5cm) long. Produces funnel-shaped, yellow flowers in summer. **H** and **S** 4in (10cm). Min. 41ºF (5ºC).

☼ ◊Z11

Lithops schwantesii
Egg-shaped, perennial succulent, divided into 2 unequal-sized leaves with blue or red marks on upper surface. Produces a yellow flower in late summer or fall. **H** ¾–1¼in (2–3cm), **S** 1¼in (3cm). Min. 41ºF (5ºC).

☼ ◊Z9–11

Faucaria tigrina (Tiger-jaws)
Clump-forming, stemless, perennial succulent. Fleshy, green leaves, 2in (5cm) long, have 9-10 teeth along each margin. Bears yellow flowers, 2in (5cm) across, in fall. **H** 4in (10cm), **S** 20in (50cm). Min. 43ºF (6ºC).

☼ ◊Z10–11

Lithops pseudotruncatella* subsp. *dendritica
Egg-shaped, perennial succulent, divided into 2 unequal-sized, gray leaves with dark green and red marks on upper surfaces. Bears a bright yellow flower in summer or fall. **H** ¾–1¼in (2–3cm), **S** 1½in (4cm). Min. 41ºF (5ºC).

☼ ◊Z9–11

Glottiphyllum nelii
Clump-forming, perennial succulent with semicylindrical, fleshy, green leaves, to 1½in (5cm) long. Produces daisylike, golden flowers, 1½in (5cm) across, in spring–summer. **H** 2in (5cm), **S** 1ft (30cm). Min. 50ºF (10ºC).

☼ ◊Z11–12

***Aichryson* x *aizoides* 'Variegatum'**
Prostrate, perennial succulent with stems crowned by rosettes of hairy, cream-marked, green leaves, often pure cream. Bears star-shaped, yellow flowers in spring. **H** 6in (15cm), **S** 16in (40cm). Min. 41ºF (5ºC).

◐ ◊Z9–11

Thelocactus setispinus
Slow-growing, perennial cactus with a 13-ribbed stem and yellow or white spines. Fragrant, yellow flowers with red throats are produced in summer on mature plants more than 2in (5cm) across. **H** and **S** 1ft (30cm). Min. 45ºF (7ºC).

☼ ◊12–15

Pleiospilos bolusii (Living rock)
Clump-forming, perennial succulent with 1 or 2 pairs of gray leaves, often wider than long, and narrowing at incurved tips. Produces golden flowers in early fall. **H** 4in (10cm), **S** 8in (20cm). Min. 41ºF (5ºC).

☼ ◊Z9–11

Pleiospilos compactus
Clump-forming, perennial succulent with 1 or 2 pairs of thick, gray leaves, to 3in (8cm) long. Bears coconut-scented, yellow flowers in early fall. **H** 4in (10cm), **S** 1ft (30cm). Min. 41ºF (5ºC).

☼ ◊Z10–11

Fenestraria rhopalophylla* subsp. *aurantiaca (Baby's toes)
Clump-forming, perennial succulent with a basal rosette of glossy leaves. Bears yellow flowers in late summer to fall. **H** 2in (5cm), **S** 1ft (30cm). Min. 43ºF (6ºC).

☼ ◊Z10–11

Sclerocactus scheeri
Spherical to columnar, perennial cactus. Stem bears spines and, in spring, funnel-shaped, straw-colored flowers. Lowest and longest spines are darker and hooked. **H** 4in (10cm), **S** 2½in (6cm). Min. 45–50ºF (7–10ºC).

☼ ◊Z13–15

YELLOW

Titanopsis calcarea
Clump-forming, perennial succulent with a basal rosette of very fleshy, triangular, blue-gray leaves covered in wartlike, gray-white and beige tubercles. Bears yellow flowers from fall to spring. **H** 1¼in (3cm), **S** 4in (10cm). Min. 50ºF (10ºC).

☼ ◊Z13–15

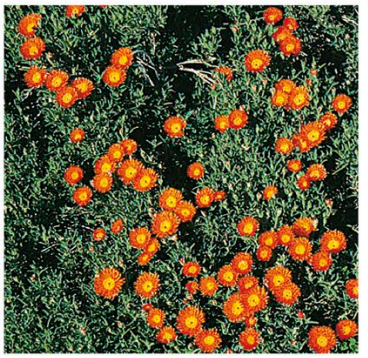
***Disocactus* 'Jennifer Ann'**
Erect, then pendent, perennial cactus. Has strap-shaped, flattened, green stems with toothed margins. Bears yellow flowers, 6in (15cm) across, in spring. **H** 1ft (30cm), **S** 20in (50cm). Min. 50ºF (10ºC).

◐ ◊Z11

ORANGE

Echinocereus triglochidiatus* var. *paucispinus
Clump-forming, perennial cactus with a 4in (10cm) wide, dark green stem that has 6 or 7 ribs, and 4–6 spines, 1¼–1½in (3–4cm) long, per areole. Bears orange-red flowers in spring. **H** 8in (20cm), **S** 20in (50cm). Min. 41ºF (5ºC).

☼ ◊Z11

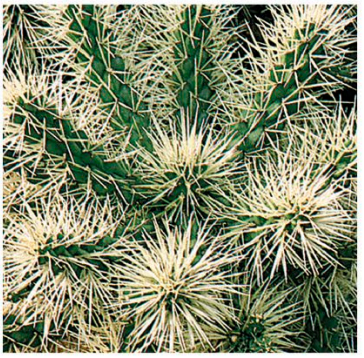


Lampranthus glaucoides
Erect, then prostrate, sparse-branching perennial succulent with short, cylindrical, tapering, gray-green leaves. Abundant daisylike, bright orange flowers, 2in (5cm) across, open in summer sun. **H** 20in (50cm), **S** 28in (70cm). Min. 41ºF (5ºC).

☼ ◊Z8–11

Rebutia arenacea
Spherical, perennial cactus. Has a brown-green stem with white spines on spirally arranged tubercles. Produces golden-yellow flowrs, to 1¼in (3cm) across, in spring. **H** 2in (5cm), **S** 2½in (6cm). Min. 41ºF (5ºC).

☼ ◊Z11



Cylindropuntia tunicata
Mounded, perennial cactus. Cylindrical, green stem segments are covered with 2in (5cm) long, golden spines, enclosed in a silver papery sheath. Produces shallowly saucer-shaped, yellow flowers from spring–summer. **H** 2ft (60cm), **S** 3ft (1m). Min. 50ºF (10ºC).

☼ ◊ ⓘZ11–12

Conophytum frutescens
Slow-growing, spherical, perennial succulent forming clumps of 2-lobed, very fleshy, gray-green leaves, often with a red spot on edge of fissure between the lobes. Produces copper-orange flowers in fall. **H** 1¼in (3cm), **S** indefinite. Min. 41ºF (5ºC).

☼ ◊Z11

Malephora crocea
Erect or spreading, perennial succulent with semicylindrical, blue-green leaves on short shoots. Produces solitary daisylike, orange-yellow flowers, reddened on outsides, from spring–summer. **H** 8in (20cm), **S** 3ft (1m). Min. 41ºF (5ºC).

☼ ◊Z9–11

Parodia chrysacanthion
Spherical, perennial cactus with a much-ribbed, green stem densely covered with bristlelike, golden spines, each ½–¾in (1–2cm) long. Crown bears yellow flowers in spring and, often, pale yellow wool. **H** and **S** 1ft (30cm). Min. 50ºF (10ºC).

◐ ◊Z10–11

Stapelia gigantea
Clump-forming, perennial succulent. From summer–fall bears star-shaped, red-marked, yellow-brown flowers, 1ft (30cm) across, with white-haired, recurved edges. **H** to 8in (20cm), **S** indefinite. Min. 52ºF (11ºC).

◐ ◊Z13–15

Rebutia fiebrigii
Clump-forming, perennial cactus. Has a dark green stem densely covered with soft, white spines, to ¾–1¼in (0.5cm) long. Bears bright orange flowers, ¾–1¼in (0.5cm) across, in late spring. **H** 4in (10cm), **S** 6in (15cm). Min. 41ºF (5ºC).

☼ ◊Z9–11

Kalanchoe delagoensis
Erect, perennial succulent with long, almost cylindrical, gray-green leaves with reddish-brown mottling and flattened, notched tips that form plantlets. Bears an umbel of orange-yellow flowers in late winter. **H** to 3ft (1m), **S** 1ft (30cm). Min. 50ºF (10ºC).

☼ ◊Z11–12

PLANT DICTIONARY

A complete listing of more than 8,000 plants, suitable for growing in temperate gardens worldwide. Includes full descriptions of the characteristics and cultivation of over 4,000 plants not already described in the Plant Catalog.

A

ABELIA

CAPRIFOLIACEAE

Genus of deciduous, semievergreen or evergreen shrubs, grown for their foliage and freely borne flowers. Where marginally hardy, does best against a south- or west-facing wall. Requires a sheltered, sunny position and fertile, well-drained soil. Remove dead wood in late spring and prune out older branches after flowering to restrict growth, if required. Propagate by softwood cuttings in summer.
***A.* 'Edward Goucher'** illus. p.153.
***A. floribunda*.** See *Vesalea floribunda*.
A.* x *grandiflora illus. p.113. **'Confetti'** is a small, semievergreen shrub. H and S 3ft (1m). Creamy-white-margined leaves are flushed pink in spring. Produces profuse clusters of soft-pink flowers from midsummer to midfall; attractive to bees and butterflies; Z6–10. **'Francis Mason'**, H 5ft (1.5m), S 6ft (2m), is vigorous and arching. Has coppery-yellow young shoots and ovate, yellowish-green leaves, darker in centers. Profuse, fragrant, bell-shaped flowers are white tinged with pink. Z6–9 **'Hopleys'**, H 5ft (1.5m), S 6ft (2m), is one of the hardiest variegated cultivars, with dark green young leaves margined yellow, later becoming creamy white; Z7–11. **'Lake Maggiore'**, H 10ft (3m), S 12ft (4m), bears pink-tinged, white flowers, with pink calyces, from midsummer to fall. Z6–10
A. parvifolia, syn. *A. schumannii*, illus. p.154. **'Bumblebee'** is a deciduous, arching shrub. H 6ft (2m), S 10ft (3m). Pointed, mid-green leaves are bronze when young. In late summer–fall, bears yellow-blotched, lilac-pink flowers. Z6–10
***A.* 'Raspberry Profusion'.** Compact, semievergreen, free-flowering shrub. H and S 4ft (1.2m). Produces a profusion of blush-pink flowers in late spring, with showy, raspberry-pink sepals; sepals are retained after the flowers drop, providing color into fall. Attractive to bees and butterflies. Z6–10
***A. schumannii*.** See *A. parvifolia*.
***A. triflora*.** See *Zabelia triflora*.

ABELIOPHYLLUM

White forsythia

OLEACEAE

Genus of one species of deciduous shrub, grown for its winter flowers. Where marginally hardy, does best against a south- or west-facing wall. Needs plenty of sun and fertile, well-drained soil. Thin out excess older shoots after flowering each year to encourage vigorous young growth. Propagate by softwood cuttings in summer.
***A. distichum*.** Deciduous, open shrub. H and S 4ft (1.2m). In late winter or spring produces fragrant, star-shaped, white flowers, tinged with pink, on bare stems; flowers may be damaged by hard frost. Leaves are ovate and dark green and often turn purple in fall. Z5–9

ABIES

Silver fir

PINACEAE

Genus of tall conifers with whorled branches. Spirally arranged leaves are needlelike, flattened, usually soft and often have silvery bands beneath. Bears erect cones that ripen in their first fall to release seeds and scales. See also CONIFERS.
***A. alba*.** Fast-growing, conical conifer. H 80–130ft (25–40m), S 13–20ft (4–6m). Has silvery-gray bark and dull green leaves, silvery beneath. Cylindrical cones are 4–6in (10–15cm) long, ripening to red-brown. Z5–8
A. amabilis (Pacific fir). Conical conifer. H 65–100ft (20–30m), S 12–15ft (4–5m). Dense, notched, square-tipped, glossy, dark green leaves, banded with white beneath, are borne on hairy, gray shoots. Oblong, violet-blue cones are 3½–6in (9–15cm) long. Z6–8. **'Spreading Star'**, H 20in (50cm), S 12–15ft (4–5m), is a procumbent form suitable for ground-cover. ***A. balsamea* f. *hudsonia*** (Hudsonia Group; Balsam fir) is a dense, dwarf conifer of flattened to globose habit. H and S 2–3ft (60cm–1m). Has smooth, gray bark and gray-green leaves that are semi-spirally arranged. Z3–6. **'Nana'** is another dwarf form that makes a dense, globose mound with leaves that are spirally arranged. Does not have cones.
A. cephalonica (Greek fir). Upright conifer with a conical crown; old trees have massive, spreading, erect branches. H 70–100ft (20–30m), S 15–30ft (5–10m). Sharp, stiff, glossy, deep green leaves are whitish green beneath. Cylindrical, tapered cones, 4–6in (10–15cm) long, are brown when ripe. Z5–6. **'Meyer's Dwarf'** (illus. p.105), H 20in (50cm), S 5ft (1.5m), has short leaves and forms a spreading, flat-topped mound.
A. concolor (White fir). Upright conifer. H 50–100ft (15–30m), S 15–25ft (5–8m). Has widely spreading, blue-green or gray leaves and cylindrical, green or pale blue cones, 3–5in (8–12cm) long. Z3–7 **'Argentea'** illus. p.95. **'Compacta'** (syn. *A.c.* 'Glauca Compacta'; illus. p.105), H to 6ft (2m), S 6–10ft (2–3m), is a cultivar with steel-blue foliage. **'Glauca Compacta'** see *A.c.* 'Compacta'. **'Violacea'** has bluish-white foliage when young.
A. delavayi (Delavay's fir). Upright conifer with tiered, spreading branches. H 30–50ft (10–15m), S 12–20ft (4–6m). Has maroon shoots and curved, bright deep green leaves, spirally arranged, with vivid silver bands beneath and rolled margins. Cones are narrowly cylindrical, 2½–6in (6–15cm) long, and violet-blue. Z8–9
A. forrestii (Forrest fir) illus. p.100.
A. grandis (Giant fir, Grand fir) illus. p.98.
A. homolepis (Nikko fir). Conifer that is conical when young, later columnar. H to 80ft (25m), S 20ft (6m). Pink-gray bark peels in fine flakes. Has pale green leaves, silver beneath, and cylindrical, violet-blue cones, 3–5in (8–12cm) long. Tolerates urban conditions. Z4–6
A. koreana (Korean fir) illus. p.104.
A. lasiocarpa (Subalpine fir). Narrowly conical conifer. H to 30ft (10m), S 10–12ft (3–4m). Has gray or blue-green leaves and cylindrical, violet-blue cones, 2½–4in (6–10cm) long. Z5–6. **var. *arizonica* 'Compacta'**, H 12–15ft (4–5m), S 5–6ft (1.5–2m), is a slow-growing, ovoid to conical tree with corky bark and blue foliage.
A. nordmanniana (Caucasian fir). Columnar, dense conifer. H to 130ft (40m), S 15ft (5m). Luxuriant foliage is rich green. Cylindrical cones, 4–6in (10–15cm) long, are green-brown, ripening to brown. Z4–6 **'Golden Spreader'**, H and S 3ft (1m), is a dwarf form with a spreading habit and bright golden-yellow leaves.
A. procera (Noble fir) illus. p.95.
A. veitchii (Veitch fir) illus. p.96.

ABUTILON

MALVACEAE

Genus of evergreen, semievergreen or deciduous shrubs, small trees, perennials and annuals, grown for their flowers and foliage. Needs full sun or partial shade and fertile, well-drained soil. Water container-grown plants freely when in full growth, less at other times. In the growing season, young plants may need tip pruning to promote bushy growth. Mature specimens may have previous season's stems cut back hard annually in early spring. Tie lax-growing species to a support if needed. Propagate by seed in spring or softwood, greenwood or semiripe cuttings in summer. Whitefly and red spider mite may be troublesome.
***A.* 'Ashford Red'** illus. p.137.
***A.* 'Golden Fleece'.** Strong-growing, evergreen, rounded shrub. H and S 6–10ft (2–3m). Has maple- to heart-shaped, serrated, rich green leaves. Pendent, bell-shaped, yellow flowers are borne from spring to fall. Z10–11
***A.* 'Kentish Belle'** illus. p.162.
A. megapotamicum illus. p.203.
A. pictum, syn. *A. striatum* of gardens. **'Thompsonii'** illus. p.324.
A. striatum of gardens. See *A. pictum*.
***A.* x *suntense*.** Fast-growing, deciduous, upright, arching shrub. H 12ft (4m), S 10ft (3m). Has ovate, lobed, toothed, gray-green leaves. Produces abundant large, pendent, saucer-shaped, white to dark violet blue flowers, from late spring to early summer. Z13–14. **'Violetta'** illus. p.138.
A. vitifolium*.** Fast-growing, deciduous, upright shrub. H 12ft (4m), S 8ft (2.5m). Abundant large, pendent, saucer-shaped, white to purple-blue flowers are produced in late spring and early summer. Has ovate, lobed, sharply toothed, gray-green leaves. Z8–9. **var. *album illus. p.113. **'Veronica Tennant'** illus. p.114.

ACACIA

Mimosa

MIMOSACEAE/LEGUMINOSAE

Genus of evergreen and deciduous trees, shrubs and climbers, grown for their tiny flowers, composed of massed stamens, and for their foliage. Many species have phyllodes instead of true leaves. Requires full sun and well-drained soil. Propagate by seed in spring. Red spider mite and mealy bug may be problematic.
A. baileyana illus. p.92. **'Purpurea'** illus. p.84.
A. dealbata (Mimosa, Silver wattle) illus. p.211.
***A. juniperina*.** See *A. ulicifolia*.
A. longifolia (Sydney golden wattle). Evergreen, spreading tree. H and S 20ft (6m). Has narrowly oblong, dark green phyllodes. Produces cylindrical clusters of golden-yellow flowers in early spring. Z9–11
A. podalyriifolia (Mount Morgan wattle, Queensland silver wattle). Evergreen, arching shrub. H 10–15ft (3–5m), S 10–12ft (3–4m). Has blue-green phyllodes and produces racemes of bright yellow flowers in spring. Z11
A. pravissima (Ovens wattle) illus. p.92.
A. pulchella (Western prickly Moses) illus. p.458.
A. ulicifolia, syn. *A. juniperina*. Evergreen, bushy shrub. H 3ft (1m), S 5ft

(1.5m). Has very narrow, cylindrical, spinelike, rich green phyllodes and, in midspring, produces globular clusters of pale yellow flowers. Z11–15

A. verticillata (Prickly Moses). Evergreen, spreading tree or bushy shrub. H 6–25ft (2–8m), S 10–25ft (3–8m). Has needlelike, dark green phyllodes and, in spring, produces dense, bottlebrush-like spikes of bright yellow flowers. Z11

ACAENA

ROSACEAE

Genus of mainly evergreen, creeping, mat-forming perennials and semiprostrate subshrubs, grown for their leaves and colored burs. Produces tight, rounded heads of small flowers. Useful as ground-cover and good for a rock garden. Some species may be invasive. Needs sun or partial shade and well-drained soil. Propagate by division in early spring or by seed in fall.

A. anserinifolia of gardens. See *A. novae-zelandiae*.

A. buchananii. Vigorous, evergreen, prostrate perennial. H ¾in (2cm), S 30in (75cm) or more. Glaucous leaves comprise 11–17 ovate, toothed leaflets. Bears globose, green flower heads in summer, which develop into spiny, yellow-green burs. Z6–8

A. caerulea. See *A. caesiiglauca*.

A. caesiiglauca, syn. *A. caerulea*, illus. p.374.

A. microphylla illus. p.374.

A. novae-zelandiae, syn. *A. anserinifolia* of gardens. Vigorous, evergreen, creeping perennial. H to 6in (15cm), S 3ft (1m) or more. Brown-green leaves are divided into 9–13 ovate, toothed leaflets. Red-spined, brownish burs develop from spherical heads of greenish-brown flowers in summer. Z6–8

***A.* 'Pewter'.** See *A. saccaticupula* 'Blue Haze'.

***A. saccaticupula* 'Blue Haze'**, syn. *A.* 'Pewter'. Vigorous, evergreen, creeping perennial. H 4–6in (10–15cm), S 3ft (1m) or more. Leaves are divided into 9–15 ovate, toothed, steel-blue leaflets. Produces spherical, brownish-red flower heads that develop in fall to dark red burs with pinkish-red spines. Z7–9

ACALYPHA

EUPHORBIACEAE

Genus of evergreen shrubs and trees, and annuals, grown for their flowers and foliage. Needs partial shade and humus-rich, well-drained soil. Water containerized plants freely when in full growth, much less at other times and in low temperatures. Stem tips of young plants may be removed in growing season to promote branching. Propagate by softwood, greenwood or semiripe cuttings in summer. Red spider mite, whitefly, and mealy bug may be troublesome.

A. hispida (Red-hot cat's tail). Evergreen, upright, soft-stemmed shrub. H 6–10ft (2–3m), S 3–6ft (1–2m). Has ovate, toothed, lustrous, deep green leaves. Tiny, crimson flowers hang in long, dense, catkinlike spikes, intermittently year-round. May be grown as a short-lived cordon. Z11 (min. 55°F/13°C)

A. wilkesiana (Copperleaf, Jacob's coat) illus. p.456.

ACANTHOLIMON

PLUMBAGINACEAE

Genus of evergreen perennials, grown for their flowers and tight cushions of spiny leaves. Suitable for rock gardens and walls. Prefers sun and well-drained soil. Dislikes damp winters. Rarely sets seed in cultivation. Propagate by softwood cuttings in late spring.

A. glumaceum illus. p.363.

A. venustum. Evergreen, cushion-forming perennial. H and S 4in (10cm). Small spikes of star-shaped, pink flowers, on 1¼in (3cm) stems, are borne from late spring to early summer amid rosetted, spear-shaped, spiny, silver-edged blue-green leaves. Needs a hot, well-drained site. Good for an alpine house. Z7–9

Acanthopanax. See *Eleutherococcus* except for ***A. ricinifolius*** for which see *Kalopanax septemlobus*.

ACANTHUS

Bear's breeches

ACANTHACEAE

Genus of perennials, some of which are semievergreen, grown for their large, deeply cut leaves and their spikes of flowers. Prefers full sun, warm conditions and well-drained soil, but tolerates shade. Protect crowns in first winter. Long, thonglike roots make plants difficult to eradicate if wrongly placed. Propagate by seed or division in early fall or spring, or by root cuttings in winter.

A. balcanicus. See *A. hungaricus*.

A. dioscoridis. Variable perennial. H 8–16in (20–40cm), S 3ft (90cm). Has ovate, deeply cut, rigid, basal leaves and hairy stems. Dense spikes of small, funnel-shaped, purple-and-white flowers are borne in late spring to late summer. Z6–9

A. hungaricus, syn. *A. balcanicus, A. longifolius*. Upright perennial. H 2–4ft (60–120cm), S 2–3ft (60–90cm). Has long, deeply cut, basal, dark green leaves. Bears spikes of white or pink-flushed flowers, set in spiny, red-purple bracts, in summer. Z6–9

A. longifolius. See *A. hungaricus*.

A. mollis. Semievergreen, stately, upright perennial. H 5ft (1.5m), S 3ft (90cm). Has long, ovate, deeply cut, bright green leaves and, in summer, produces many spikes of funnel-shaped, mauve-and-white flowers. Z7–11. **'Hollard's Gold'** illus. p.219.

Latifolius Group 'Rue Ledan' has green and white flowers.

***A.* 'Morning's Candle'.** Clump-forming perennial. H to 32in (80cm), S to 28in (70cm). Produces deeply cut, dark green leaves and tall spikes of white flowers with purple bracts from mid- to late summer. Z6–9

A. spinosus illus. p.239.

ACCA

SYN. FEIJOA

MYRTACEAE

Genus of evergreen, opposite-leaved shrubs, grown for their shallowly cup-shaped flowers. Needs a sheltered, sunny site and light, well-drained soil. Propagate by seed sown as soon as ripe or by semiripe cuttings in summer.

A. sellowiana (Pinapple guava) illus. p.203.

ACER

Maple

SAPINDACEAE/ACERACEAE

Genus of deciduous or evergreen trees and shrubs, grown for their foliage, which often colors brilliantly in fall and, in some cases, for their ornamental bark or stems. Small, but often attractive flowers are followed by 2-winged fruits. Requires sun or semishade and fertile, moist but well-drained soil. Many acers produce their best fall color on neutral to acidic soil. Propagate species by seed as soon as ripe or in fall; cultivars by various grafting methods in late winter or early spring,or by budding in summer. Leaf-eating caterpillars or aphids sometimes infest plants, and maple tar spot may affect *A. platanoides* and *A. pseudoplatanus*.

A. buergerianum (Trident maple). Deciduous, spreading tree. H 30ft (10m) or more, S 22ft (7m). Has 3-lobed, glossy, dark green leaves, usually providing an attractive, long-lasting display of red, orange and purple in fall. Z5–9

A. campestre. Deciduous, round-headed tree. H 30ft (10m), S 25ft (8m). Has ovate to rounded, 5-lobed leaves, downy beneath and at edges, and with leaf stalks of similar length, which exude a milky sap when broken. Foliage turns rich yellow in fall. Bears green flowers in spring, followed by fruit with spreading wings that ripen to red. Z4–8. **'Carnival'**, H 22ft (7m), S 16ft (5m), is smaller, with leaves broadly margined creamy white, flushed pinkish red when young. **'Evenly Red'** has distinctive, rich red fall foliage. **'William Caldwell'**, H 26ft (8m), S 5ft (1.5m), is compact and upright, often with vivid orange-red fall color.

A. capillipes (Snake-bark maple) illus. p.77.

A. cappadocicum (Cappadocian maple). Deciduous, spreading tree. H 70ft (20m), S 50ft (15m). Has 5-lobed, bright green leaves that turn yellow in fall. Z5–7. **'Aureum'** has bright yellow young leaves that turn light green in summer and assume yellow fall tints. **subsp. *lobelii*** (syn. *A. lobelii,* Lobel's maple) illus. p.62

A. carpinifolium (Hornbeam maple) illus. p.88.

A. circinatum (Vine maple). Deciduous, spreading, bushy tree or shrub. H 15ft (5m) or more, S 20ft (6m). Rounded, 7–9-lobed, mid-green leaves turn brilliant orange and red in fall. Bears clusters of small, purple-and-white flowers in spring. Z6–9

A. cissifolium. Deciduous, spreading tree. H 25ft (8m), S 30ft (10m). Leaves have 3 ovate, toothed leaflets, and are bronze-tinged when young, dark green in summer, turning red and yellow in fall. Best in semishade and on neutral to acidic soil. Z4–8. **subsp. *henryi*** see *A. henryi*.

A.* x *conspicuum. Variable, deciduous tree, often upright, vase-shaped in habit. H 30ft (10m), S 12ft (4m). Bark is blue-green to pinkish red with conspicuous white stripes, especially when young. Broad, mainly smooth, mid-green leaves turn striking golden to orange-yellow in fall. Racemes of small, yellowish green flowers are borne in spring, followed by green to red winged fruit. Z5–9. **'Phoenix'**, H 22ft (7m), S 8ft (2.5m), has coral-red young shoots in winter, the older, pinkish bark striped with white. Cut shoots to the bases annually for the best winter color effect. **'Silver Vein'**, S 15ft (5m), has trunk and branches heavily veined with white on a bluish-green bark; perhaps the most striking of all snake-bark maples.

A. crataegifolium (Hawthorn maple). Deciduous, arching tree. H and S 30ft (10m). Green-and-white streaked branches bear small, ovate, mid-green leaves that turn orange in fall. Z6–8. **'Veitchii'** illus. p.85.

A. davidii (Père David's maple, Snake-bark maple; illus. p.78). Deciduous tree with upright branches. H 40ft (12m), S 25ft (8m). Branches are striped green and white. Ovate, glossy, dark green leaves often turn yellow or orange in fall. Z5–7. **'George Forrest'** is broadly upright, with mid- to dark green leaves, but poor fall color. **subsp. *grosseri*** see *A. grosseri*. **'Madeline Spitta'** illus. p.76. **'Rosalie'** has arching, spreading branches, and conspicuous purplish-blue young shoots, maturing to green with strong white veining.

A.* x *freemanii. Variable, deciduous tree with upright, silvery-gray branches, forming a broadly columnar, conical, ovate, or rounded crown. H 40–70ft (12–20m), S 20–40ft (6–12m). The 3–5-lobed, deeply dissected leaves are mid-green, silvery beneath, and turn red and yellow in fall. Clusters of tiny reddish flowers are produced in early spring, sometimes followed by greenish winged seeds. Z5–7. **AUTUMN BLAZE ('Jeffersred')** forms an ovate crown. Outstanding orange-red color in fall; drought tolerant.

A. ginnala. See *A. tataricum* subsp. *ginnala*.

A. giraldii. Deciduous, spreading tree. H and S 50ft (15m). Shoots have a blue-gray bloom. Large, sycamore-like, shallowly lobed leaves, with long, pink stalks, are dark green above, blue-white beneath. Z7–9

A. grandidentatum. See *A. saccharum* subsp. *grandidentatum*.

A. griseum (Paperbark maple; illus. p.78). Deciduous, spreading tree. H and S 30ft (10m). Has striking, peeling, orange-brown bark. Dark green leaves have 3 leaflets and turn red and orange in fall. Z4–8

A. grosseri, syn. *A. davidii* subsp. *grosseri* (Snakebark maple; illus. p.78). Deciduous, upright and spreading tree. H and S 30ft (10m). Has white-striped trunk and branches. Broadly ovate, deeply lobed, bright green leaves turn red in fall. Z5–7

A. henryi, syn. *A. cissifolium* subsp. *henryi*, illus. p.76.

A. japonicum (Full-moon maple, Japanese maple). Deciduous, bushy tree or shrub. H 12ft (4m), S 25ft (8m). Rounded, lobed leaves are mid-green, turning red in fall. Clusters of small, reddish-purple flowers open in midspring. Shelter from

strong winds. Z5–7. **'Aconitifolium'** illus. p.90. **'Aureum'** see *A. shirasawanum* 'Aureum'. **'Green Cascade'** has a cascading habit with leaves similar to 'Aconitifolium' but smaller, turning scarlet, orange and yellow in fall. Train leading shoot vertically when young to obtain a weeping habit. **'Vitifolium'** illus. p.77.
A. laxiflorum, syn. *A. pectinatum* subsp. *laxiflorum*, illus. p.92.
A. lobelii. See *A. cappadocicum* subsp. *lobelii*.
A. macrophyllum (Oregon maple) illus. p.60.
A. maximowiczianum, syn. *A. nikoense* (Nikko maple). Slow-growing, deciduous, round-headed tree. H and S 40ft (12m). Leaves have 3 ovate, bluish-green leaflets that turn brilliant red and yellow in fall. Z6–9
A. monspessulanum (Montpelier maple). Deciduous, usually compact, round-headed tree or shrub. H and S 25ft (8m). Small, 3-lobed, glossy, dark green leaves remain on tree until late fall. Z7–9
A. negundo (Box elder, Ash-leaved maple). Fast-growing, deciduous, spreading tree. H 50ft (15m), S 30ft (10m). Bright green leaves have 3–5 ovate leaflets. Clusters of inconspicuous, greenish-yellow flowers are borne in late spring. Z5–8. **'Variegatum'** illus. p.74. **var. *violaceum*** has purplish branchlets covered in a glaucous bloom and prominent clusters of tassel-like, purplish-pink flowers. **'Winter Lightning'** has bright yellow-gold new growth in winter and yellow fall foliage; prune hard in late winter for best effect.
A. nikoense. See *A. maximowiczianum*.
A. opalus (Italian maple). Deciduous, round-headed tree. H and S 50ft (15m). Clusters of small, yellow flowers emerge from early to mid-spring, before foliage. Leaves are broad, 5-lobed and dark green, turning yellow in fall. Z5–8
A. palmatum (Japanese maple). Deciduous, bushy-headed shrub or tree. H 25ft (8m), S 30ft (10m). Palmate, deeply lobed, mid-green leaves turn brilliant orange, red or yellow in fall. Clusters of small, reddish-purple flowers are produced in midspring. Z6–8. **'Ariadne'** (Matsumurae Group), H and S 10ft (3m), is smaller. In spring, leaves are marbled light orange, pink, and red with yellow-green veining, changing in summer to purplish-red with red veins and in fall reverting to the earlier tones, with a pink margin. Bears red fruit in fall. **'Atropurpureum'** (Amoenum Group) illus. p.115. **'Beni-maiko'** (Palmatum Group), H 10ft (3m), produces fiery red leaves in spring, maturing to greenish-red with red veins, reddish-pink in fall. **'Beni-tsukasa'** (Palmatum Group), H 15ft (5m), S 10ft (3m), produces leaves that emerge dark pinkish-red, changing to yellow-pink, then mid-green by late summer, with some variegation. **'Bloodgood'** (Amoenum Group) illus. p.138. **'Burgundy Lace'** (Matsumurae Group), H and S 16ft (5m), has very deeply cut, dark red-purple leaves. **'Butterfly'** (Palmatum Group) produces gray-green leaves edged with cream and pink. **'Chitose-yama'** (Matsumurae Group) illus. p.89. **'Corallinum'** (Palmatum Group) illus. p.123. **var. *coreanum*** see *A.p.* 'Korean Gem'. **'Crimson Queen'** (Dissectum Group), H 10ft (3m), S 12ft (4m), has arching shoots and red-purple leaves divided into finely cut, deeply toothed lobes. **'Dissectum Atropurpureum'** see *A.p.* 'Ornatum'. **'Emerald Lace'** (Dissectum Group), H 15ft (5m), S 12ft (4m), is a vigorous, weeping form with lacy, deep green, deeply dissected foliage that turns bright burgundy-red in fall. **'Inaba-shidare'** (Dissectum Group), H 8ft (2.5m), S 10ft (3m), is a strong, upright form with cascading side branches; large leaves remain deep purple, turning crimson in fall. **'Kiyohime'** (Dwarf Group), H and S 6ft (2m), is a dense, slow-growing shrub with small, dark green leaves, edged orange-red in spring, turning yellow-orange in fall; good for containers. **'Korean Gem'** (Matsumurae Group; syn. *A.p.* var. *coreanum*, *A.p.* var. *koreanum*, *A.p.* 'Koreanum') has mid-green leaves turning brilliant red in fall.
var. *koreanum* see *A.p.* 'Korean Gem'. **'Koreanum'** see *A.p.* 'Korean Gem'. **'Orange Dream'** (Palmatum Group), H 12ft (4m), S 10ft (3m), is an upright shrub with orange-yellow young growth, but developing later and lasting longer; the deeply divided leaves turn light green by midsummer and yellow in fall; best grown in light shade; Z6–9. **'Ornatum'** (Dissectum Group; syn. *A.p.* 'Dissectum Atropurpureum') illus. p.156. **'Osakazuki'** (Amoenum Group) illus. p.90. **'Sango-kaku'** (Palmatum Group; syn. *A.p.* 'Senkaki'; Coral-bark maple) illus. p.78. **'Seiry'** (Dissectum Group), H 22ft (7m), S 12ft (4m), is upright, with bright green, lacy foliage, red-tinged when young, turning golden yellow in fall. **'Senkaki'** see *A.p.* 'Sango-kaku'. **'Shindeshojo'** (Palmatum Group) illus. p.123. **'Trompenburg'** (Matsumurae Group), H 22ft (7m), S 12ft (4m), is a vigorous shrub or small tree with deeply divided, lobed leaves that are deep purple-red, turning reddish-green in late summer; the leaf edges fold downward. **'Villa Taranto'** (Linearilobum Group), H and S 10ft (3m), forms a compact, dome-shaped plant with lobed, linear leaves; foliage is orange-crimson at first, green by midsummer, and golden yellow in fall.
A. pectinatum* subsp. *laxiflorum. See *A. laxiflorum*.
A. pensylvanicum (Snakebark maple) illus. p.79. **'Erythrocladum'** (illus. p.78) is a deciduous, upright tree. H 40ft (12m), S 30ft (10m). Has brilliant candy-pink, young shoots in winter and large, boldly lobed, mid-green leaves that turn bright yellow in fall. Z5–7
A. platanoides (Norway maple). Vigorous, deciduous, spreading tree. H 80ft (25m), S 50ft (15m). Has large, broad, sharply lobed, bright green leaves that turn yellow or orange in fall and clusters of yellow flowers borne in midspring before the leaves emerge. Z3–7. **'Columnare'**, H 40ft (12m), S 25ft (8m), is dense and columnar. **'Crimson King'** illus. p.60. **'Drummondii'** has leaves broadly edged with creamy white. **'Emerald Queen'** is upright when young. **'Globosum'**, H 25ft (8m), S 30ft (10m), has a dense, round crown. **'Lorbergii'** see *A.p.* 'Palmatifidum'. **'Palmatifidum'** (syn. *A.p.* 'Lorbergii') illus. p.67. **'Royal Red'** has deep reddish-purple leaves. Those of **'Schwedleri'** are bright red when young, maturing to purplish-green in summer and turn orange-red in fall. **'Summershade'** has dark green leaves.
A. pseudoplatanus (Sycamore). Fast-growing, deciduous, spreading tree. H 70ft (20m), S 50ft (15m). Has broadly 5-lobed, dark green leaves. A fine specimen tree and good for an exposed position. Z4–7. **'Brilliantissimum'** illus. p.84.
f. *erythrocarpum* illus. p.65.
f. *variegatum* 'Simon-Louis Frères' illus. p.73.
A. rubrum (Red maple) illus. p.66. **'Columnare'** illus. p.76. **'Franksred'** see *A.r.* Red Sunset. **'October Glory'** is a deciduous, spreading tree. H 70ft (20m), S 30ft (10m). Has 3- or 5-lobed, glossy, dark green leaves that become intense red in fall, particularly on neutral to acidic soil. In spring, bare branches are covered with clusters of tiny, red flowers. **Red Sunset ('Franksred')** has dense growth that turns brilliant red in fall. **'Scanlon'** illus. p.66. **'Schlesingeri'** illus. p.66. Z3–9
A. rufinerve (Snake-bark maple) illus. p.76. **'Hatsuyuki'** (syn. *A.r.* f. *albolimbatum*) is a deciduous, arching tree. H and S 30ft (10m). Striped green and white branches have 3-lobed, mid-green leaves, mottled and edged with white, that turn orange and red in fall. Z6–9
A. saccharinum (Silver maple) illus. p.63.
f. *laciniatum* 'Wieri' is a fast-growing, deciduous, spreading tree with pendent lower branches. H 80ft (25m), S 50ft (15m). Deeply lobed, mid-green leaves, with silver undersides, turn yellow in fall. Z4–8
A. saccharum (Sugar maple). **subsp. *grandidentatum*** (syn. *A. grandidentatum*) is a deciduous, spreading tree. H and S 30ft (10m). Broad 3-or 5-lobed, bright green leaves turn orange-red in early fall. Z4–8.
subsp. *nigrum* 'Temple's Upright' illus. p.77.
***A. shirasawanum* 'Aureum'**, syn. *A. japonicum* 'Aureum', illus. p.89.
A. sieboldianum. Rounded, bushy, deciduous tree. H and S 20ft (6m). Produces rounded, lobed, mid-green leaves that turn orange-yellow to red in fall and bears small, nodding, tiny yellow flowers in late spring. Z5–8
A. tataricum* subsp. *ginnala, syn. *A. ginnala* (Amur maple) illus. p.90.
A. triflorum illus. p.91.
A. velutinum. Deciduous, spreading tree. H 70ft (20m), S 50ft (15m). Produces large, sycamore-like, lobed, dark green leaves, with undersides covered with pale brown down. Z7–9. **var. *vanvolxemii*** (Van Volxem's maple) has even larger leaves, slightly glaucous and smooth beneath.

ACHILLEA

ASTERACEAE/COMPOSITAE

Genus of mainly deciduous perennials, some of which are semievergreen, suitable for borders and rock gardens. Has fernlike foliage and large, usually platelike, flower heads mainly in summer. Flower heads may be dried for winter decoration. Tolerates most soils but prefers a sunny, well-drained site. Tall species and cultivars need staking. Propagate by division in early spring or fall or by softwood cuttings in early summer. ⓣ Contact with foliage may aggravate skin allergies.
A. ageratifolia. Tufted perennial. H 2½–8in (6–20cm), S 12in (30cm). Has branched, slightly woody stems covered with shaggy hairs. Gray-green leaves are linear to oblong-lance-shaped and may be entire or have small forward-pointing teeth. Bears 1–3 flat heads of white flowers in summer. Z4–8
A. argentea. See *Tanacetum argenteum*.
A. argentea of gardens. See *A. clavennae*.
***A.* 'The Beacon'.** See *A.* 'Fanal'.
***A.* 'Belle Epoque'** (illus. p.247). Semievergreen, upright perennial. H 3ft (1m), S 16in (40cm). Has feathery, dark green, basal leaves and bears flat heads of rose-red flowers, maturing to lemon-yellow, in summer. Z3–9
***A.* 'Christine's Pink'** (illus. p.247). Semievergreen, upright perennial. H 3ft (90cm), S 16in (40cm). Has feathery, dark green, basal leaves. In summer produces flat heads of pale pink flowers, which fade as they age. Z3–9
A. clavennae, syn. *A. argentea* of gardens, illus. p.359.
A. clypeolata. Semievergreen, upright perennial. H 18–24in (45–60cm), S 12in (30cm). Has divided, hairy, silver leaves and produces dense, flat heads of small, yellow flowers in summer. Divide regularly in spring. Z3–9
***A.* 'Coronation Gold'.** Upright perennial. H 30–36in (75–90cm), S 18in (45cm). Has feathery, silvery leaves. Produces large, flat heads of small, golden flower heads in summer that dry well for winter decoration. Divide and replant every third year. Z3–9
***A.* 'Fanal'**, syn. *A.* 'The Beacon', illus. p.235.
A. filipendulina. Upright perennial. H 4ft (1.2m), S 18in (45cm). Has deeply divided, pale green, basal leaves. In summer, erect flowering stems bear dense, domed heads of tiny, daisylike, bright yellow flowers. Good for cut flowers and for drying. Z3–9. **'Cloth of Gold'**, H 5ft (1.5m), has light green leaves and deep golden-yellow flower heads. **'Gold Plate'** illus. p.243. **'Parker's Variety'** (illus. p.247), H to 4½ft (1.4m), has rather rounded flower heads.
***A.* 'Heidi'** (illus. p.247). Semievergreen, upright perennial. H 2ft (60cm) or more, S 16in (40cm). Has feathery, dark green, basal leaves and produces flat heads of pink flowers, maturing to near white, in summer. Z3–9
***A.* 'Hella Glashoff'.** Clump-forming perennial. H and S 28in (70cm). Has linear to lance-shaped mid-green leaves and bears flat heads of creamy-yellow flowers in summer. Z4–9
***A.* 'Lachsschönheit'** (illus. p.247). Semievergreen, upright perennial. H 3ft (90cm), S 20in (50cm). Has feathery, dark green, basal leaves. Bears flat heads of pinkish-orange flowers, maturing to pinkish-cream, in summer. Z3–9
***A.* x *lewisii* 'King Edward'**. Semievergreen, rounded, compact, woody-based perennial. H 4in (10cm) or more, S 9in (23cm) or more. Has feathery, soft,

gray-green leaves. Bears compact heads of minute, buff-yellow flower heads in summer. Good for a rock garden, wall or bank. Z3–8

***A.* 'Lucky Break'.** Semievergreen, upright perennial. H 3ft (90cm) or more, S 20in (50cm). Has feathery, silvery-green, basal leaves. Bears flat heads of pale yellow flowers, maturing to creamy-white, in summer. Z3–9

***A.* 'Martina'.** Semievergreen, upright perennial. H 34in (85cm), S 20in (50cm). Has feathery, dark green foliage. Bears numerous flat heads of light greenish-yellow flowers with slightly darker centers, in summer. Z3–9

A. millefolium (Yarrow). Variable, spreading, sometimes invasive perennial. H and S 2ft (60cm). Has long, narrow, divided, dark green, basal leaves. From late spring to late summer, erect flowering stems bear flattened heads of tiny, daisy-like, white or sometimes pink flowers. Prefers poor soil. Z3–9. **'Lansdorferglut'** (illus. p.247) bears salmon-pink flowers that fade to ivory with a pink flush.

'Red Velvet' (illus. p.247), H 2ft (60cm), bears rich rose-red flowers.

***A.* 'Mondpagode'.** Semievergreen, bushy, upright perennial. H 3½ft (1.1m), S 20in (50cm). Has feathery, grayish-green foliage. Bears domed heads of creamy-white flowers, which open light yellow-cream, in summer. Needs staking. Z3–9.

***A.* 'Moon Pagoda'.** See *A.* 'Mondpagode'.

***A.* 'Moonshine'.** Upright perennial. H and S 2ft (60cm). Produces flat heads of bright yellow flowers throughout summer above a mass of small, feathery, gray-green leaves. Divide regularly in spring. Z3–8

***A.* 'Paprika' (Galaxy Series).** Semievergreen, Upright perennial. H 18in (45cm), S 2ft (60cm). Has feathery, silvery-green, basal leaves. Bears flat heads of rich rusty-red flowers in summer. Z3–9

***A.* 'Pretty Belinda'.** Semievergreen, upright perennial. H and S 20in (50cm). Has aromatic, feathery, dark green, basal leaves. In summer, produces a succession of rounded, deep pink flower heads, fading to a softer color, which creates a 2-tone effect. Z3–9

***A. ptarmica* 'The Pearl'** (illus. p.247). Upright perennial. H 30in (75cm), S 2ft (60cm). Has large heads of small, pompom-like, white flowers in summer and tapering, glossy, dark green leaves. May spread rapidly. Z3–8

***A.* 'Summerwine'.** Semievergreen, upright perennial. H 32in (80cm) or more, S 16in (40cm) or more. Has feathery, dark green, basal leaves. In summer bears flat heads of deep red flowers maturing to soft purplish-brown. Z4–9

***A.* 'Terracotta'** (illus. p.247). Semievergreen, upright perennial. H 3ft (1m), S 2ft (60cm). Has feathery, gray-green, basal leaves. Produces flat heads of burnt-orange flowers, maturing to cream, in summer. Z3–9

***A.* 'The Beacon'.** See *A.* 'Fanal'.

***A. tomentosa*.** Mat-forming perennial. H to 14in (35cm), S 18in (45cm). Produces linear, feathery, woolly, gray-green leaves and bears flat, lemon-yellow flower heads, from early summer to early fall. Z3–9

ACHIMENES

Hot-water plant

GESNERIACEAE

Genus of erect or trailing perennials with small rhizomes and showy flowers. Prefers bright light, but not direct sunlight, and well-drained soil. Use tepid water for watering containerized plants. Allow plants to dry out after flowering and store rhizomes in a frost-free place over winter. Propagate by division of rhizomes or by seed, if available, in spring or by stem cuttings in summer.

***A. antirrhina*.** Erect perennial. H 12in (30cm), S 6in (15cm). Has ovate, toothed leaves, to 2in (5cm) or more long and of unequal size in each opposite pair. In summer, bears funnel-shaped, red-orange flowers, to 1in (25cm) across, with yellow throats. Z15 (min. 41–50°F/5–10°C)

***A. coccinea*.** See *A. erecta*.

A. erecta, syn. *A. coccinea, A. pulchella*. Erect, bushy, branching perennial. H 18in (45cm), S 12in (30cm). Has narrowly ovate, toothed leaves, 2½in (6cm) long, often in whorls of 3. Tubular, scarlet flowers, ½in (1cm) across, with yellow eyes are borne in summer. Z15 (min. 41–50°F/5–10°C)

***A. grandiflora*.** Erect perennial. H and S to 2ft (60cm). Ovate, toothed leaves, 6–7in (15–18cm) long, are often reddish below. In summer, bears tubular, dark pink to purple flowers, to 2in (5cm) across, with white eyes. Z15 (min. 41–50°F/5–10°C)

***A.* 'Kim Blue'.** Semierect to trailing perennial. H to 12in (30cm), S 18in (45cm). Has pairs of ovate, toothed, deep green leaves, to 2½in (6cm) long, bronze-green underneath. Large, purplish blue flowers with a white center, to 2½in (6cm) across, are borne in summer. Good for a hanging basket. Z15 (min. 50–59°F/10–15°C)

***A.* 'Little Beauty'** illus. p.469.

***A.* 'Paul Arnold'.** Erect, compact, free-flowering perennial. H and S 16in (40cm). Has ovate, toothed leaves, 2½in (6cm) long. Bears large, funnel-shaped, purple flowers, 2in (5cm) across, in summer. Z15 (min. 41–50°F/5–10°C)

***A.* 'Peach Blossom'.** Trailing perennial. H and S 8in (20cm). Has ovate, toothed leaves, to 2½in (6cm) long. In summer, bears large, funnel-shaped, peach-colored flowers, 2in (5cm) across. Z15 (min. 41–50°F/5–10°C)

***A. pulchella*.** See *A. erecta*.

***A.* 'Yellow Beauty'.** Erect perennial. H 9in (24cm), S 12in (30cm). Produces pairs of ovate, toothed, slightly hairy, dark green leaves, 2in (5cm) long. Solitary, primrose-yellow flowers, 2in (5cm) across, are borne from summer to fall. Z10–12 (min. 41–50°F/5–10°C)

***Achnatherum calamagrostis*.** See *Stipa calamagrostis*.

***Acidanthera*.** See *Gladiolus*.

ACIPHYLLA

APIACEAE/UMBELLIFERAE

Genus of evergreen perennials, grown mainly for their architectural, spiky foliage but also for their flowers, which are produced more freely on male plants. Needs sun and well-drained soil. Protect neck of plant from winter wet with a deep layer of stone chips. Propagate by seed when fresh, in late summer, or in early spring.

A. aurea (Golden Spaniard) illus. p.227.

A. scott-thomsonii (Giant Spaniard). Evergreen, rosette-forming perennial. H 10ft (3m) or more, S 6ft (2m). Much-dissected, spiny foliage is bronze when young, maturing to silver-gray. Prickly spikes of tiny, creamy-yellow flowers are rarely produced. Prefers a moist but well-drained site. Z8–11

A. squarrosa (Bayonet plant) illus. p.242.

ACIS

AMARYLLIDACEAE

Genus of bulbs, grown for their pendent, bell-shaped, white or pink flowers, borne in fall or spring. Some plants prefer a moist, partially shaded site, others do best in a position in sun and in well-drained soil. Propagate by division in spring or early fall, or by seed in fall.

A. autumnalis, syn. *Leucojum autumnale* (Autumn snowflake), illus. p.424.

A. hiemalis, syn. *A. nicaeensis, Leucojum hiemale, L. nicaeense*. Early-spring-flowering bulb. H 4in (10cm), S 2in (5cm). Leafless stems produce 1 or 2 bell-shaped, waxy, white flowers, ½in (1cm) long, and has 2–4 narrowly linear, grayish green basal leaves, to 12in (30cm) long. Will survive outside in a sunny, sheltered site, but is best grown in an alpine house. Z4–8

***A. nicaeensis*.** See *A. hiemalis*.

A. rosea, syn. *Leucojum roseum*. Early-fall-flowering bulb. H to 4in (10cm), S 1–2in (2.5–5cm). Slender stems bear usually solitary, pale pink flowers, ½in (1cm) long. Threadlike, erect, basal leaves emerge with, or just after, flowers. Prefers sun and well-drained soil. Z3–9

ACOKANTHERA

APOCYNACEAE

Genus of evergreen shrubs and trees, grown for their flowers and overall appearance. Needs full light and good drainage. Water containerized plants moderately, less when not in full growth. Propagate by seed in spring or fall or by semiripe cuttings in summer. ① The sap and small, plumlike fruits that follow the flowers are highly toxic if ingested.

A. oblongifolia, syn. *A. spectabilis, Carissa spectabilis* (Wintersweet), illus. p.453.

***A. spectabilis*.** See *A. oblongifolia*.

ACONITUM

Aconite, Monkshood, Wolf's bane

RANUNCULACEAE

Genus of perennials and biennials with poisonous, tuberous or fibrous roots and upright, sometimes scandent, stems, which bear curious, hooded flowers in summer. Leaves are mostly rounded in outline. Suitable for rock gardens or borders. Prefers a site in sun, but tolerates some shade—this may enhance flower color. Requires fertile, well-drained soil. Propagate by division in fall, every 2–3 years, or by seed in fall.

① Contact with the foliage may irritate skin; all parts are highly toxic if ingested.

***A. anthora*.** Compact, tuberous perennial. H 24–28in (60–70cm), S 12in (30cm). Erect, leafy stems bear several hooded, yellow flowers in summer. Leaves are divided and dark green. Z5–8

***A.* x *bicolor*.** See *A.* x *cammarum* 'Bicolor'.

***A.* 'Bressingham Spire'.** Compact, upright, tuberous perennial. H 3ft (1m), S 1ft (30cm). Erect spikes of hooded, violet-blue flowers are borne in summer. Deeply divided leaves are glossy, dark green. Z3–7

***A.* x *cammarum* 'Bicolor'**, syn. *A.* x *bicolor*, illus. p.239.

***A. carmichaelii* 'Arendsii'**, syn. *A.c.* 'Arends'. Erect, tuberous perennial. H 4ft (1.2m), S 1ft (30cm). Has divided, rich green leaves and, in fall, spikes of hooded, rich deep blue flowers. Upright stems may need staking, particularly if planted in a shady site. Z3–8

A. hemsleyanum, syn. *A. volubile* of gardens, illus. p.204.

***A.* 'Ivorine'.** Upright, tuberous perennial. H 3ft (90cm), S 18in (45cm). Bears hooded, creamy-white flowers in erect spikes in early summer. Strong stems bear deeply divided, glossy, green leaves. Z3–8

A. lycoctonum* subsp. *vulparia, syn. *A. orientale* of gardens, *A. vulparia* (Wolf's bane), illus. p.243.

A. napellus (Helmet flower, Monkshood). Upright, tuberous perennial. H 5ft (1.5m), S 1ft (30cm). Bears tall, slender spires of hooded, light indigo-blue flowers in late summer and deeply cut, mid-green leaves. Z3–8. **'Albiflorus'** see *A.n.* subsp. *vulgare* 'Albidum'. **subsp. *vulgare* 'Albidum'** (syn. *A.n.* 'Albiflorus') has white flowers.

***A.* 'Newry Blue'.** Upright, tuberous perennial. H 5ft (1.5m), S 12in (30cm). Produces hooded, dark blue flowers on erect stems in summer and has deeply divided, glossy, dark green leaves. Z5–8

A. orientale of gardens. See *A. lycoctonum* subsp. *vulparia*.

***A.* 'Spark's Variety'.** Upright, tuberous perennial. H 4–5ft (1.2–1.5m), S 18in (45cm). Bears violet-blue flowers on branching stems in summer. Leaves are deeply divided, glossy and dark green. Z5–8

***A.* 'Stainless Steel'** illus. p.241.

A. volubile of gardens. See *A. hemsleyanum*.

***A. vulparia*.** See *A. lycoctonum* subsp. *vulparia*.

Aconogonon. See *Persicaria*.

ACORUS

ARACEAE

Genus of semievergreen or deciduous marginal aquatic perennials, grown for their frequently aromatic foliage. Requires an open, sunny position. *A. calamus* needs up to 10in (25cm) depth of water. Tidy up fading foliage in fall; lift and divide plants every 3 or 4 years, in spring, as clumps become congested.

***A. calamus* 'Argenteostriatus'** illus. p.434.

A. gramineus (Japanese rush). Semievergreen, aquatic perennial. H 3–14in (8–35cm), S 4–6in (10–15cm). Produces fans

of 2-ranked, linear, glossy, rich green leaves, 3–14in (8–35cm) long. Z10–11.
'Ogon' (syn. *A.g.* 'Wogon') has glossy, variegated leaves, striped with pale green and cream. **'Variegatus'** illus. p.435.
'Wogon' see *A.g.* 'Ogon'.

ACRADENIA

RUTACEAE

Genus of evergreen shrubs or trees, grown for their foliage and flowers. Requires a sheltered position in sun or semishade and fertile, well-drained soil. Does best planted against a south- or west-facing wall. Propagate by semiripe cuttings in summer.
A. frankliniae illus. p.192.

Acroclinium. See *Rhodanthe*.

ACTAEA

SYN. CIMICIFUGA
Baneberry

RANUNCULACEAE

Genus of clump-forming perennials, grown mainly for their colorful, but poisonous, berries. Likes woodland conditions—moist, peaty soil and shade. Propagate by division in spring or by seed in fall. ⓘ The berries are highly toxic if ingested.
A. alba. See *A. pachypoda*.
A. alba of gardens. See *A. rubra* f. *neglecta*.
A. cordifolia, syn. *A. racemosa* var. *cordifolia*, *A. rubifolia*, *Cimicifuga racemosa* var. *cordifolia*, *C. rubifolia*. Clump-forming perennial. H 5ft (1.5m), S 2ft (60cm). In midsummer, feathery plumes of star-shaped, creamy-white flowers are borne above broadly ovate to lance-shaped, dissected, light green leaves. Z3–7
A. erythrocarpa of gardens. See *A. rubra*.
A. pachypoda, syn. *A. alba* (Doll's eyes, White baneberry), illus. p.246.
A. racemosa, syn. *Cimicifuga racemosa*. Clump-forming perennial. H 1–5ft (30–150cm), S 2ft (60cm). Spikes of bottlebrush-like, pure white flowers are borne in midsummer above broadly ovate, divided, fresh green leaves. Z3–8. **var. *cordifolia*** see *A. cordifolia*.
A. rubifolia. See *A. cordifolia*.
A. rubra, syn. *A. erythrocarpa* of gardens (Red baneberry). Clump-forming perennial. H 18in (45cm), S 12in (30cm). Small, fluffy, white flowers are followed in fall by clusters of poisonous, rounded, scarlet berries, borne above ovate, divided, bright green leaves. Z4–8. **f. *neglecta*** (syn. *A. alba* of gardens) has white berries.
A. simplex, syn. *Cimicifuga simplex,* illus. p.220. **'Elstead'** is an upright perennial. H 4ft (1.2m), S 2ft (60cm). Purple stems bear arching racemes of fragrant, bottlebrush-like, white flowers in fall. Has broadly ovate to lance-shaped, divided, glossy leaves. **'Prichard's Giant'**, H 7ft (2.2m), has large, much-divided leaves and bears white flowers on arching panicles. Z3–7

ACTINIDIA

ACTINIDIACEAE

Genus of mainly deciduous, woody-stemmed, twining climbers. Grows in partial shade but needs sun for fruit to form and ripen. Grow in any well-drained soil that does not dry out. Prune in winter if necessary. Propagate by seed in spring or fall, by semiripe cuttings in midsummer or by layering in winter.
A. arguta. Deciduous, woody-stemmed, twining climber. H 22ft (7m). Has ovate to oblong-ovate, bristle-toothed, dark green leaves, to 5in (12cm) long. In early summer produces clusters of fragrant, cup-shaped, white, unisexual flowers which in male plants have purple anthers. Oblong, smooth-skinned, edible, yellow-green fruits, to 1in (25cm) long, are produced on female plants. Z3–8. **'Issai'** is self-fertile.
A. chinensis of gardens. See *A. deliciosa*.
A. deliciosa, syn. *A. chinensis* of gardens (Kiwi fruit, Chinese gooseberry). Vigorous, mainly deciduous, woody-stemmed, twining climber. H 30ft (10m). Heart-shaped leaves are 5–8in (13–20cm) long. In summer bears clusters of cup-shaped, white flowers that later turn yellowish, followed by edible, hairy, brown fruits. To obtain fruits, both male and female plants must usually be grown. Z7–9
A. kolomikta illus. p.201.
A. pilosula of gardens. See *A. tetramera* var. *maloides*.
A. polygama (Silver vine). Mainly deciduous, woody-stemmed, twining climber. H 15ft (5m). Heart-shaped leaves, 3–5in (7–13cm) long, are bronze when young and sometimes have creamy upper sections. Scented, cup-shaped, white flowers, usually arranged in groups of 3 male, female or bisexual, are produced in summer, followed by edible but not very palatable, egg-shaped, bright yellow fruits. Z4–9
A. tetramera* var. *maloides, syn. *A. pilosula* of gardens. Vigorous, deciduous climber. H 25ft (8m). Produces narrowly oblong-ovate, bristly-edged, dark green leaves, often marked silvery white on the upper surface, extending from the tip to sometimes the whole surface. The 5-petaled, rose-pink flowers are produced in clusters in the leaf axils in spring. Z6–9

Ada aurantiaca. See *Brassia aurantiaca*.

ADANSONIA

Baobab

MALVACEAE/BOMBACACEAE

Genus of mostly deciduous, spring-flowering trees, grown for their characteristically swollen trunks, their foliage and to provide shade. Has flowers only on large, mature specimens. Requires full light and sharply drained soil. Allow soil of container plants almost to dry out between waterings. Propagate by seed sown in spring. Pot specimens under glass are susceptible to red spider mite.
A. digitata. Slow-growing, deciduous rounded tree. H to 60ft (18m), S 100ft (30m). Produces palmate leaves comprising 5–7 lustrous, green leaflets. Fragrant, pendent, long-stalked, white flowers, with 5 reflexed petals, are borne in spring, followed by edible, sausage-shaped, brown fruits. Z11 (min. 61°F/16°C)

ADENIUM

Desert rose

APOCYNACEAE

Genus of perennial succulents with fleshy, swollen trunks. Needs sun or partial shade and well-drained soil; very prone to rotting. Propagate by seed sown in spring or summer. ⓘ The milky sap that bleeds from broken stems may irritate skin and cause severe discomfort if ingested.
A. obesum illus. p.486.

ADENOCARPUS

PAPILIONACEAE/LEGUMINOSAE

Genus of deciduous and evergreen, sometimes semievergreen, shrubs, occasionally trees. They are grown for their profuse, broomlike, yellow flowers, borne in spring or early summer. Requires full sun and well-drained soil; best grown against a warm, sunny wall. Propagate by seed sown in fall.
A. viscosus. Semievergreen, arching shrub. H 3ft (1m), S 5ft (1.5m). Gray-green leaves with 3 narrowly lance-shaped leaflets densely cover shoots. Produces dense, terminal racemes of orange-yellow flowers in late spring. Z10–11

ADENOPHORA

Gland bellflower

CAMPANULACEAE

Genus of summer-flowering, fleshy-rooted perennials, grown for their bell- or funnel-shaped flowers. Requires a site in full sun and rich, well-drained but not over-dry soil. May become invasive but resents disturbance. Propagate by basal cuttings taken in early spring or by seed sown in fall.
A. potaninii. Rosette-forming perennial. H 2–3ft (60–90cm), S 1ft (30cm). Produces arching sprays of bell-shaped, pale bluish-lavender flowers in late summer, above basal, ovate to lance-shaped, mid-green leaves. Z4–8

Adhatoda duvernoia. See *Justicia adhatoda*.

ADIANTUM

PTERIDACEAE/ADIANTACEAE

Genus of deciduous, semievergreen or evergreen ferns. Prefers semishade and moist, neutral to acidic soil (*A. aleuticum* prefers alkaline soil). Remove fading fronds regularly. Propagate by spores in summer.
A. aleuticum, syn. *A. pedatum* var. *aleuticum*, illus. p.291. **'Subpumilum'** (syn. *A. a.* subsp. *subpumilum, A. a.* var. *subpumilum*; Dwarf maidenhair fern) is a semievergreen fern. H to 6in (15cm), S 12in (30cm). Has broadly ovate to kidney-shaped fronds, 4–5in (10–12cm) long, with oblong segments and black stalks and midribs. Z3–8
A. capillus-veneris (Maidenhair fern). Semievergreen or evergreen fern. H 12in (30cm), S 16in (40cm). Has dainty, triangular to ovate, segmented, arching, light green fronds on black stems. Z8–11
A. cuneatum. See *A. raddianum*.
A.* x *mairisii. Evergreen fern, deciduous at around -4°C (25°F). H and S 16in (40cm). Produces short-creeping rhizomes and triangular, 2-pinnate mid-green fronds, to 16in (40cm) long, which bear fan-shaped pinnae. Similar to *A. capillus-veneris*, but larger, more erect and hardier, with smaller segments. Z8–10
A. pedatum (Northern maidenhair fern) illus. p.291. **var. *aleuticum*** see *A. aleuticum*.
A. raddianum, syn. *A. cuneatum* (Delta maidenhair). Semievergreen or evergreen fern. H to 2ft (60cm), S 32in (80cm). Triangular, divided, pale green segments are borne on finely dissected fronds that have purplish-black stems. (min 45°F/7°C)
Z11 . **'Fritz Lüthi'** has bright green fronds. **'Grandiceps'** (Tassel maidenhair) has elegant, tasseled fronds.
A. venustum illus. p.292.

ADLUMIA

PAPAVERACEAE

Genus of one species of herbaceous, biennial, leaf-stalk climber, grown for its leaves and flowers. Grow in semishade in any soil. Propagate by seed in spring.
A. cirrhosa. See *A. fungosa*.
A. fungosa, syn. *A. cirrhosa* (Allegheny vine, Climbing fumitory). Herbaceous, biennial, leaf-stalk climber. H 10–15ft (3–5m). Delicate leaves have numerous leaflets. Tiny, tubular, spurred, white or purplish flowers are borne in drooping panicles in summer. Z3-7

ADONIS

RANUNCULACEAE

Genus of spring-flowering annuals and perennials, grown for their foliage and flowers. Some thrive in semishade; others need an open, well-drained site. Propagate by seed when fresh, in late summer, or by division after flowering.
A. amurensis of gardens. See *A.* 'Fukujukai'.
A. brevistyla. Clump-forming perennial. H 8–16in (20–40cm), S 8in (20cm). Mid-green leaves are finely cut. In early spring, bears cup-shaped, white flowers, tinged blue outside, singly at the tips of stems. Z4–9
***A.* 'Fukujukai'**, syn. *A. amurensis* of gardens. Clump-forming perennial. H 12in (30cm), S 9–12in (23–30cm). Has finely cut, mid-green leaves, and cup-shaped, semidouble, golden flowers, borne singly at the tips of stems in late winter and early spring. Z5–9
A. vernalis illus. p.262.

ADROMISCHUS

CRASSULACEAE

Genus of stemless or short-stemmed perennial succulents with rounded, thin or fat leaves. Needs partial shade and very well-drained soil. Propagate by leaf or stem cuttings in spring or summer.
A. cooperi, syn. *Cotyledon cooperi*, *Echeveria cooperi*. Freely branching perennial succulent. H 4in (10cm), S to 6in (15cm). Has grayish-brown stems and inversely lance-shaped, glossy, gray-green leaves, to 2in (5cm) long, often purple-marked above. In summer, produces tubular, green-and-red flowers, with

white-margined, pink or purple lobes, on a stem 10in (25cm) or more long. Z14–15 (min. 45°F/7°C)
A. maculatus illus. p.492.

AECHMEA

BROMELIACEAE

Genus of evergreen, rosette-forming, mostly epiphytic perennials, cultivated for their foliage, flowers and fruits. May be grown in full light or a semishaded site. Provide a rooting medium of equal parts humus-rich soil and either sphagnum moss or bark or plastic chips used for orchid culture. Using soft water, water moderately in summer, sparingly at all other times, and keep cuplike, rosette centers filled with water from spring through to fall. Propagate by offsets in late spring.
A. distichantha. Evergreen, basal-rosetted, epiphytic perennial. H and S to 3ft (1m). Forms dense rosettes of narrowly oblong, round-tipped, arching leaves, dull green above, gray and scaly beneath. Has panicles of small, tubular, purple or blue flowers among white-felted, pink bracts, usually in summer. Z15 (min. 50°F/10°C)
A. fasciata, syn. *Billbergia rhodocyanea* (Silver vase plant, Urn plant; illus. p.471). Evergreen, tubular-rosetted, epiphytic perennial. H 16–24in (40–60cm), S 12–20in (30–50cm). Has loose rosettes of broadly oblong, round-tipped, incurved, arching leaves with dense, gray scales and silver cross-banding. Bears dense, pyramidal panicles of tubular, blue-purple flowers among pink bracts, above foliage, from spring to fall. Z11–12 (min. 50°F/10°C)
***A.* Foster's Favorite Group** (Lacquered wine-cup). Evergreen, basal-rosetted, epiphytic perennial. H and S 1–2ft (30–60cm). Has loose rosettes of strap-shaped, arching, lustrous, wine-red leaves. Drooping spikes of small, tubular, deep purple-blue flowers are borne in summer, followed later by pear-shaped, red fruits. Z15 (min. 50°F/10°C)
A. fulgens (Coral berry). Evergreen, basal-rosetted, epiphytic perennial. H to 20in (50cm), S 16in (40cm). Forms loose rosettes of broadly oblong, arching, glossy, mid-green leaves with gray scales beneath and rounded or pointed tips. In summer, produces, above foliage, erect panicles of small, tubular, violet-purple flowers that turn red with age. These are succeeded by small, rounded to ovoid, red fruits on red stalks. Z15 (min. 50°F/10°C)
A. nudicaulis. Evergreen, basal-rosetted, epiphytic perennial. H to 28in (70cm), S 10in (25cm). Produces loose rosettes of a few broadly strap-shaped, arching, olive-green leaves with spiny edges and usually banded with gray scales beneath. Spikes of small, tubular, yellow flowers open above large, red bracts in summer. Z9–11 (min. 50°F/10°C)
A. recurvata (illus. p.471). Evergreen, basal-rosetted, epiphytic perennial. H to 8in (20cm), S to 20in (50cm). Narrowly triangular, tapered, spiny-edged, arching, red-flushed, mid-green leaves are produced in dense rosettes. In summer, bears a short, dense spike of tubular, red-and-white flowers, with red bracts, just above leaves. Z9–11 (min. 50°F/10°C)

AEGOPODIUM

Bishop's weed, Goutweed, Ground elder

APIACEAE/UMBELLIFERAE

Genus of invasive, rhizomatous perennials, most of which are weeds, although *A. podagraria* 'Variegatum' is excellent as groundcover. Tolerates sun or shade and any well-drained soil. Propagate by division of rhizomes in spring or fall.
***A. podagraria* 'Variegatum'.** Vigorous, spreading perennial. H 1–2ft (30–60cm), S indefinite. Has lobed, creamy-white-variegated leaves. Insignificant, white flowers, borne in summer, are best removed. Z4–9

AEONIUM

CRASSULACEAE

Genus of evergreen, perennial, rarely biennial succulents, often subshrubby, grown for their rosettes of bright green or blue-green, occasionally purple, leaves. Prefers partial shade and very well-drained soil. Most species grow from fall to spring and are semidormant in midsummer. Propagate by seed in summer or, for branching species, by stem cuttings in spring or summer.
A. arboreum. Erect, succulent subshrub. H and S to 6ft (2m). Branched stems are each crowned by a rosette, up to 6in (15cm) across, of broadly lance-shaped, glossy, bright green leaves. In spring, produces cones of small, star-shaped, golden flowers on 2–3-year-old stems, which then die back. Z9–11. (min. 41°F/5°C).
'Schwarzkopf' see *A.* 'Zwartkop'.
A. haworthii (Pinwheel) illus. p.489.
A. tabuliforme illus. p.491.
***A.* 'Zwartkop'**, syn. *A. arboreum* 'Schwarzkopf', illus. p.310.

AESCHYNANTHUS

GESNERIACEAE

Genus of evergreen subshrubs, climbers and trailing and semitrailing perennials, some of which are epiphytic, useful for growing in hanging baskets. Needs a fairly humid atmosphere and a position out of direct sun. Water sparingly in low temperatures. Propagate by tip cuttings in spring or summer.
***A.* 'Black Pagoda'.** Semitrailing perennial. H 2ft (60cm), S to 18in (45cm). Elliptic leaves are pale green with dark brown marbling above, purple beneath. Produces terminal clusters of burnt-orange flowers, with green calyces, from summer to winter. Z15 (min. 59–64°F/15–18°C)
A. longicaulis, syn. *A. marmoratus, A. zebrinus.* Evergreen, semitrailing perennial. H 2ft (60cm), S to 36in (90cm). Ovate, waxy leaves are dark green, veined yellowish-green above, purplish below. Bears tubular, greenish flowers, with dark brown markings, in terminal clusters in summer. Z15 (min. 59–64°F/15–18°C)
A. marmoratus. See *A. longicaulis*.
A. pulcher (Lipstick plant, Royal red bugler). Evergreen, ephiphytic climber. H 30in (75cm). Produces thick, ovate leaves and small, tubular, hooded, bright red flowers, with yellow throats, borne in terminal clusters from summer to winter. Z14–15 (min. 59–64°F/15–18°C)
A. speciosus, syn. *A. splendens*, illus. p.478.
A. splendens. See *A. speciosus.*
A. zebrinus. See *A. longicaulis.*

AESCULUS

Buckeye, Horse chestnut

SAPINDACEAE/HIPPOCASTANACEAE

Genus of deciduous trees and shrubs, grown for their bold, divided leaves and conspicuous, upright panicles or clusters of flowers, followed by fruits (horse chestnuts) sometimes with spiny outer casings. Requires sun or semishade and fertile, well-drained soil. Propagate species by sowing seed in fall, cultivars by budding in late summer or by grafting in late winter. Leaf spot may affect young foliage, and coral spot fungus may attack damaged wood. ☠ All parts of these plants may cause mild stomach upset if ingested.
A. californica (California buckeye) illus. p.81.
A.* x *carnea (Red horse chestnut).
'Briotii' illus. p.60.
A. chinensis (Chinese horse chestnut) illus. p.60.
A. flava, syn. *A. octandra* (Sweet buckeye, Yellow buckeye), illus. p.76.
A. glabra (Ohio buckeye). Deciduous, broadly conical, sometimes shrubby tree. H 50ft (15m), S 30ft (10m). Leaves, usually composed of 5 narrowly ovate leaflets, are dark green. Bears 4-petaled, greenish-yellow flowers in upright clusters in late spring and early summer. Z3–7. **'October Red'** has bronze-red fall leaves.
***A. hippocastanum*.** Vigorous, deciduous, spreading, rounded tree. H 80ft (25m), S 70ft (20m). Has large leaves with 5 or 7 leaflets and spires of white flowers, flushed pink and yellow in centers in spring. Spiny fruits contain glossy, brown nuts in fall. Z3–8. **'Baumannii'** has dark green leaves turning to yellow in fall and double, yellow- or red-marked, white flowers.
'Hampton Court Gold', H 50ft (15m), S 25ft (8m), is slower-growing, and bears soft-yellow leaves in spring, greener in summer; foliage may scorch in hot sun.
A. indica (Indian horse chestnut). Deciduous, spreading, rounded tree. H and S 50ft (15m). Glossy, dark green leaves with usually 7 narrowly ovate leaflets are bronze when young, orange or yellow in fall. Upright panicles of 4-petaled, pink-tinged, white flowers, marked with red or yellow, are borne in midsummer. Z7–8.
'Sydney Pearce' illus. p.73.
A.* x *neglecta (Sunrise horse chestnut).
'Erythroblastos' illus. p.72.
A. octandra. See *A. flava*.
A. parviflora (Bottlebrush buckeye) illus. p.113.
A. pavia (Red buckeye). Deciduous, conical shrub or small tree. H 15ft (5m), S 10ft (3m). Glossy, dark green leaves consist of 5 narrowly ovate leaflets. Has panicles of 4-petaled, red flowers in early summer. Z5–9. **'Atrosanguinea'** illus. p.86. **var. *discolor* 'Koehnei'**, H and S 6ft (2m), is very slow-growing and compact, with deep bronze young leaves and soft orange-red and yellow flowers.
A. turbinata (Japanese horse chestnut). Deciduous, spreading, sturdy-branched tree. H 70ft (20m), S 40ft (12m). Large, dark green leaves have 5 or 7, narrowly ovate leaflets. Bears panicles of creamy-white flowers in late spring and early summer. Z6–8

AETHIONEMA

BRASSICACEAE/CRUCIFERAE

Genus of evergreen or semievergreen, dwarf subshrubs, woody-based perennials and annuals, grown for their prolific flowers. Needs sun and well-drained soil. Propagate by softwood cuttings in spring or by seed in fall. Most species self-seed readily.
A. armenum illus. p.364.
A. grandiflorum, syn. *A. pulchellum* (Persian stone cress), illus. p.338.
A. iberideum. Evergreen or semievergreen, rounded, compact shrub. H and S 6in (15cm). Bears small, lance-shaped, gray-green leaves and, in summer, ¾in (2cm) stems each bear a raceme of small, saucer-shaped, white flowers. Z6–8
A. pulchellum. See *A. grandiflorum.*
***A.* 'Warley Rose'** illus. p.362.
***A.* 'Warley Ruber'.** Evergreen or semievergreen, rounded, compact subshrub. H and S 6in (15cm). Has tiny, linear, bluish-green leaves. Racemes of small, deep rose-pink flowers are produced on ¾–1¼in (2–3cm) stems in spring–summer. Z6–8

AGAPANTHUS

AGAPANTHACEAE

Genus of clump-forming perennials, some evergreen, with erect stems that carry large umbels of bell- to tubular-bell-shaped or trumpet-shaped flowers, usually blue and often fading to purple with age. Leaves are strap-shaped. Grow in full sun and in moist, well-drained soil. Protect crowns with mulch in winter. Plants increase slowly but may be propagated by division in spring; may also be raised from seed in fall or spring. Named cultivars will not come true from seed.
A. africanus (African lily). Evergreen, clump-forming perennial. H 3ft (1m), S 20in (50cm). In late summer, has rounded umbels of deep blue flowers on upright stems, above broad, dark green leaves. Z9–10
***A.* 'Alice Gloucester'.** Clump-forming perennial. H 3ft (1m), S 20in (50cm). Produces large, dense, rounded umbels of white flowers in summer, above narrow, mid-green leaves. Z7–11
***A.* 'Ben Hope'.** Clump-forming perennial. H to 4ft (1.2m), S 2ft (60cm). Erect stems support dense, rounded umbels of deep blue flowers in late summer and early fall, borne over narrow, grayish-green leaves. Z7–10
***A.* 'Blue Giant'.** Clump-forming perennial. H 4ft (1.2m), S 2ft (60cm). Has rounded heads of open, bell-shaped rich blue flowers in mid- to late summer. Z8–11
A. campanulatus. Clump-forming perennial. H 2–4ft (60cm–1.2m), S 18in (45cm). Rounded umbels of blue flowers are borne on strong stems in summer, above narrow, grayish-green leaves. Z7–11

A. caulescens. Clump-forming perennial. H 3–4ft (90–120cm), S 2ft (60cm). From midsummer to early fall, leeklike stems carry open, rounded umbels of bell-shaped violet-blue flowers. Lower leaves are narrowly strap-shaped; upper leaves are broader. Z6–10

A. inapertus. Clump-forming perennial. H 3–5ft (90cm–1.5m), S 2ft (60cm). Pendent, narrowly tubular, blue flowers are borne on very erect stems, above narrow, bluish-green leaves, in late summer and fall. Z6–10. **subsp. *pendulus* 'Graskop'** illus. p.240.

***A.* 'Lilliput'.** Compact, clump-forming perennial. H and S 16in (40cm). Has small, rounded umbels of dark blue flowers that are produced in summer. Leaves are narrow and mid-green. Z6–9

***A.* 'Loch Hope'.** Clump-forming perennial. H to 5ft (1.5m), S 2ft (60cm). Bears large, rounded umbels of deep blue flowers in late summer and early fall, above narrow, grayish-green leaves. Z8–11

***A.* 'Northern Star'** illus. p.241.

***A.* 'Phantom'.** Evergreen, clump-forming perennial. H 4ft (1.2m), S 2ft (60cm) or more. Large, rounded clusters of white flowers, flushed pale blue at the margins, are borne on sturdy stems in mid- to late summer. Has broadly strap-shaped, bright green leaves. Z9–11

A. praecox. Variable, evergreen perennial. H to 4ft (1.2m), S 18in (45cm). Has rounded umbels of usually trumpet-shaped, white or blue flowers in late summer and early fall. Z8–10. **'Albiflorus'** is white-flowered.

***A.* 'Purple Cloud'** illus. p.241.

AGAPETES

SYN. PENTAPTERYGIUM

ERICACEAE

Genus of evergreen, occasionally briefly deciduous, spreading to erect scandent shrubs, grown for their flowers. Provide full light or partial shade and a humus-rich, well-drained but not dry, neutral to acidic soil. Water containerized specimens freely when in full growth, but moderately at other times. Overly long stems may be cut back to promote branching, but they are best tied to supports. Propagate by seed sown in spring or by semiripe cuttings taken in late summer.

A. incurvata, syn. *A. rugosa* var. *rugosa* of gardens. Evergreen, loose shrub, which may be trained as a climber, with arching to pendent stems. H to 3ft (1m), S 3–6ft (1–2m) as a shrub; H 6–10ft (2–3m) as a climber. Leaves are lance-shaped to ovate, wrinkled and bright green. In spring, bears clusters of pendent, urn-shaped, white flowers, patterned with purple-red, from leaf axils. Z12–13 (min. 41–15°F/5–7°C)

***A.* 'Ludgvan Cross'.** Evergreen, scandent shrub with arching or pendulous stems. H and S 4–5ft (1.2–1.5m). Produces lance-shaped, dark green leaves, and urn-shaped, red flowers, with darker patterns, in spring. Z10–11

A. macrantha. See *A. variegata* var. *macrantha.*

A. rugosa* var. *rugosa of gardens. See *A. incurvata.*

A. serpens illus. p.461.

A. variegata* var. *macrantha, syn. *A.macrantha*, illus. p.461.

AGASTACHE

Mexican giant hyssop

LAMIACEAE/LABIATAE

Genus of summer-flowering perennials with aromatic leaves. Requires full sun and fertile, well-drained soil. Plants are short-lived and should be propagated each year by softwood or semiripe cuttings taken in late summer.

***A.* 'Black Adder'** illus. p.280.

A. mexicana, syn. *Brittonastrum mexicanum*, *Cedronella mexicana.* Bushy, upright perennial with aromatic leaves. H 2–3ft (60–90cm), S 1ft (30cm). Whorls of small, tubular flowers in shades of pink to crimson are borne in dense spikes in mid- and late summer. Leaves are ovate, pointed, toothed and mid-green. Z7–11

Agathaea. See *Felicia.*

AGATHOSMA

RUTACEAE

Genus of evergreen shrubs, grown for their flowers and overall appearance. Requires full light and well-drained, acidic soil. Water containerized plants moderately, less when not in full growth. Propagate by semiripe cuttings in late summer.

A. pulchella, syn. *Barosma pulchella.* Evergreen, rounded, wiry, aromatic shrub. H and S to 3ft (1m). Produces a dense mass of small, ovate, leathery leaves. Terminal clusters of small, 5-petaled, purple flowers are freely borne in spring–summer. Z9–11

AGAVE

ASPARAGACEAE/AGAVACEAE

Genus of rosette-forming, perennial or monocarpic succulents with sword-shaped, sharp-toothed leaves. Small species, to 1ft (30cm) high, flower only after 5–10 years; tall species, to 15ft (5m) high, may take 20–40 years to flower. The majority of species that have hard, blue-gray leaves are hardy; gray-green- or green-leaved species are usually frost-tender. Requires full sun and well-drained soil. Propagate by seed or offsets in spring or summer.

A. americana (Century plant). Basal-rosetted, perennial succulent. H 3–6ft (1–2m), S 6–10ft (2–3m). Has sharply pointed, toothed leaves, to 5–6ft (1.5–2m) long. Branched flower stem, to 25ft (8m) long, bears dense, tapering spikes of bell-shaped, white to pale creamy-yellow flowers, each 3½in (9cm) long, in spring–summer. Offsets freely. Z8–11. (min. 41°F/5°C). **'Marginata'** (illus. p.482) has yellow margins, which often become white with age, and a central green zone to each leaf. **'Mediopicta'** has central, yellow stripes along leaves. **'Striata'** illus. p.481.

A. attenuata illus. p.489.

A. duplicata. See *Polianthes geminiflora.*

A. filifera (Thread agave; illus. p.482). Basal-rosetted, perennial succulent. H 12–20in (30–50cm), S 3ft (1m). Narrow, green leaves are spined at the tip. White leaf margins gradually break away, leaving long, white fibers. Produces yellow-green flowers on a 8ft (2.5m) tall stem in summer. Offsets freely. Z10–11 (min. 41°F/5°C)

A. geminiflora (illus. p.482). Basal-rosetted, perennial succulent. H to 2ft (60cm) or 18ft (6m) in flower, S to 3ft (1m). Has very narrow, linear, smooth green leaves, to 2ft (60cm) long, with fine filaments along the edges. In late summer, bears a tall, spike of up to 1,500 yellow-green to reddish flowers, to 2in (5cm) long. Z8–11

A. hystrix. See *A. stricta.*

A. macroacantha (illus. p.482). Basal-rosetted, perennial succulent. H 12–16in (30–40cm), S 10–16in (25–40cm). Narrowly sword-shaped, toothed, bluish-gray leaves have dark brown spines. Flower stem, to 6ft (2m) long, bears slender panicles of tubular, purple-tinged, green flowers, 2in (5cm) long, and sometimes bulbils, in summer. Z8–11 (min. 41°F/5°C)

A. maculosa, syn. *Manfreda maculosa*. Basal-rosetted, perennial succulent. H 24–72in (60cm–1.8m), S 12–36in (30–90cm). Lance-shaped, grooved, dark green leaves, with small, distantly spaced teeth, and sometimes dark green- or brown-spotted patterns. Flower stem, to 6ft (1.8m) long, bears narrow spikes of bell-shaped, white to yellowish-white flowers, ⅝in (1.5cm) long, in summer. Z8–11 (min. 41°F/5°C)

A. parrasana (illus. p.482). Basal-rosetted, compact, perennial succulent. H 12–16in (30–40cm), S 12–18in (30–45cm). Ovate, closely packed and overlapping, thick, rigid, light gray leaves have toothed margins with short, grayish-brown spines. Flower stem, 10–13ft (3–4m) long, bears ellipsoidal panicles of bell-shaped, pale yellow flowers, 2in (5cm) long, flushed red or purple, in summer. Z9–11

A. parryi illus. p.489.

A. parviflora (illus. p.482). Basal-rosetted, perennial succulent. H 6in (15cm), S 20in (50cm). Has narrow, white-marked, dark green leaves with white fibers peeling from edges. Produces white or pale yellow flowers in summer. Z10–11 (min. 41°F/5°C)

A. polianthes. See *Polianthes tuberosa.*

A. scaphoidea. See *A. utahensis.*

A. schottii. Basal-rosetted, perennial succulent. H 8–16in (20–40cm), S 12–18in (30–45cm). Narrowly linear, yellowish green to green leaves have margins bearing brittle threads. Often crooked flower stem, to 6ft (2m) long, produces slender spike of tubular, yellow flowers, 1¼–1½in (3–4cm) long, in summer. Z8–11

A. stricta, syn. *A. hystrix* (illus. p.482). Short-stemmed, perennial succulent. H and S 10–20in (25–50cm). Produces rosettes of linear-lance-shaped, sharply tapered, mid-green leaves, to 14in (35cm) long, with red-brown terminal spines. In summer, bears red to purple-red flowers, 3¼in (2cm) long, in dense, erect, spikelike racemes, 6–8ft (2–2.5m) long. Z8–10 (min. 41°F/5°C)

A. utahensis, syn. *A. scaphoidea*. Basal-rosetted, perennial succulent. H 12in (30cm), S indefinite. Has rigid, blue-gray leaves, each with spines up margins and a long, dark spine at tip. Flower stem, to 5ft (1.5m) long, bears yellow flowers in summer. Z11

A. victoriae-reginae (illus. p.482). Slow-growing, variable perennial succulent. H and S to 20in (50cm). Produces basal rosettes of tight-fitting, triangular to oblong, straight or incurved, dark green leaves, marked white, usually along the margins. Leaf margins are usually entire, but may have small white spines. Flower stem, to 16ft (5m) long, bears a narrow, dense spike of funnel-shaped, creamy-white flowers, sometimes tinged purple, ¾–1¼in (2–3cm) long, in summer. Z9–11. **'Compacta'** is slow-growing and smaller, H 12in (30cm), S 18in (45cm); deep green leaves have a small, terminal spine and spineless, white margins.

A. zebra. Basal-rosetted, perennial succulent. H 3ft (1m), S 1½–3ft (45–60cm). Lance-shaped, thick, rigid, rough, wavy-margined, patterned, light gray leaves have curved, gray spines. Flower stem, 20–25ft (6–8m) long, bears a narrow panicle of bell-shaped, yellow flowers, 1¾in (4.5cm) long, in summer. Z11

AGERATINA

ASTERACEAE/COMPOSITAE

Genus of evergreen shrubs, subshrubs and herbaceous perennials, grown mainly for their flowers, some also for their architectural foliage. Requires full light or partial shade. Will grow in any conditions, although most species prefer moist but well-drained soil. Water containerized plants freely when in full growth, moderately at other times. Prune shrubs lightly after flowering or in spring. Propagate by seed in spring; shrubs and subshrubs may also be propagated by softwood or greenwood cuttings in summer, perennials by division in early spring or fall. Red spider mite and whitefly may be troublesome.

A. altissima, syn. *Eupatorium ageratoides, E. rugosum, E. urticifolium* (Hardy age, Mist flower, White snakeroot). Erect perennial. H 5–6ft (1.5–1.8m), S 2ft (60cm). Produces nettlelike, gray-green leaves and, in late summer, bears dense, flat, white flower heads. Z4–8

A. ligustrina, syn. *Eupatorium ligustrinum, E. micranthum, E. weinmannianum.* Evergreen, rounded shrub. H and S 6–15ft (2–5m). Has elliptic to lance-shaped, bright green leaves and, in fall, fragrant, groundsel-like, white or pink flowers are produced in flattened clusters, 4–8in (10–20cm) across. Z13–15

AGERATUM

Floss flower

ASTERACEAE/COMPOSITAE

Genus of annuals and biennials, grown for their rounded clusters of flowers, which are attractive to butterflies. Useful for bedding. Grow in sun and fertile, well-drained soil, which should not be allowed to dry out or growth and flowering will be poor. Deadhead regularly for continuous flowering. Propagate by seed sown outdoors in late spring.

***A. houstonianum* cultivars.** Moderately fast-growing, compact, hummock-forming annuals. H and S 6–12in (15–30cm). All have ovate, downy, mid-green leaves, with heart-shaped bases. Rounded, brushlike clusters of small flower heads are borne just above the foliage from midsummer until first frosts. Z10–11. **'Blue Danube'** illus. p.313. **'Blue Mink'** illus. p.314. **Hawaii Series** are uniform, compact plants, with deep to pale blue or white flower heads. **'Pacific'** has a neat habit

and produces tight clusters of deep violet-blue flower heads. **'Swing Pink'** is dwarf with attractive, pink flower heads.

AGLAONEMA

Chinese evergreen

ARACEAE

Genus of evergreen, erect, tufted perennials, grown mainly for their foliage. Tolerates shade, although the variegated forms need more light, and prefers moist but well-drained soil. Water moderately in full growth, less in winter. Propagate by division or stem cuttings in summer. Mealy bug may be a problem.

A. commutatum. Evergreen, erect, tufted perennial. H and S 20in (50cm). Broadly lance-shaped leaves, 12in (30cm) long, are dark green with irregular, grayish-white patches along lateral veins. Bears greenish-white spathes in summer. Z14–15. (min. 55°F/13°C). **'Malay Beauty'** (syn. *A.c.* 'Pewter') bears very dark green leaves mottled greenish-white and cream.Z15.

'Pewter' see *A.c.* 'Malay Beauty'.

'Treubii' illus. p.468.

A. pictum illus. p.475.

***A.* 'Silver King'** illus. p.475.

AGONIS

Willow myrtle

MYRTACEAE

Genus of evergreen, mainly spring-flowering shrubs and small trees, grown for their foliage, flowers, and graceful appearance. Needs full light and well-drained but moisture-retentive soil. Water containerized plants moderately, scarcely at all in winter. Pruning tolerated when necessary. Propagate by seed in spring or by semiripe cuttings in summer.

A. flexuosa (Peppermint tree, Willow myrtle) illus. p.450.

AGROSTEMMA

Corn cockle

CARYOPHYLLACEAE

Genus of summer-flowering annuals. Grow in sun; flowers best in very well-drained soil that is not very fertile. Support with sticks and deadhead to prolong flowering. Propagate by seed sown *in situ* in spring or early fall. ⓘ Seeds may cause severe discomfort if ingested.

A. coeli-rosa. See *Silene coeli-rosa.*

A. githago. Fast-growing, erect annual with thin stems. H 2–3ft (60–90cm), S 1ft (30cm). Has lance-shaped, mid-green leaves and, in summer, produces 5-petaled, open trumpet-shaped, pink flowers, 3in (8cm) across. Tiny, rounded, dark brown seeds are poisonous. Z4–10. **'Milas'** illus. p.304.

AICHRYSON

CRASSULACEAE

Genus of annual and perennial succulents, often shrublike, grown for their fleshy, spoon-shaped to rounded, hairy leaves. Most species are short-lived, dying after flowering. Requires a position in full sun or partial shade and very well-drained soil. Propagate by seed or stem cuttings in spring or summer.

***A.* x *aizoides* var. *domesticum* 'Variegatum'**, syn. *A.* x *domesticum* 'Variegatum', illus. p.495.

AILANTHUS

SIMAROUBACEAE

Genus of deciduous trees and shrubs, grown for their foliage and 3–5-winged fruits. They are extremely tolerant of urban pollution. Needs sun or semishade and deep, fertile, well-drained soil. To grow as shrubs, cut back hard in spring, after which vigorous shoots bearing very large leaves are produced. Propagate by seed sown in fall or by suckers or root cuttings taken in winter. ⓘ Male flowers are unpleasantly scented; the pollen may cause an allergic reaction.

A. altissima, syn. *A. glandulosa* (Tree of heaven), illus. p.63.

A. glandulosa. See *A. altissima.*

AJUGA

LAMIACEAE/LABIATAE

Genus of annuals and perennials, some of which are semievergreen or evergreen and excellent as groundcover. Tolerates sun or shade and any soil, but is more vigorous in moist conditions. Propagate by division in spring.

A. pyramidalis (Pyramidal bugle). Evergreen or semievergreen perennial. H 6–10in (15–25cm), S 18–24in (45–60cm). Forms a creeping carpet of oblong to spoon-shaped, deep green leaves. Bears spikes of whorled, 2-lipped, blue flowers in spring. Z3–9. **'Metallica Crispa'** has crisp, curled leaves, with a metallic-bronze lustre, and bears dark blue flowers.

***A. reptans* 'Atropurpurea'.** Evergreen, groundcover perennial, spreading freely by runners. H 6in (15cm), S 24–36in (60–90cm). Has small rosettes of ovate to oblong-spoon-shaped, toothed or slightly lobed, glossy, deep bronze-purple leaves. Short spikes of 2-lipped, blue flowers are borne in spring. Z3–9. **'Catlin's Giant'** has very large, dark bronze-purple leaves, to 6in (15cm) long, and produces inflorescences to 8in (20cm) long. **'Jungle Beauty'** has large, dark green leaves, sometimes suffused purple. **'Multicolor'** (syn. *A.r.* 'Rainbow') has dark bronze-green leaves, marked with cream and pink.

'Rainbow' see *A.r.* 'Multicolor'.

AKEBIA

LARDIZABALACEAE

Genus of deciduous or semievergreen, woody-stemmed, twining climbers, grown for their leaves and flowers. Individual plants seldom bear fruits; cross-pollination between 2 plants is needed for fruit to form. Hardy, but late frost may damage the flowers. Prefers full sun and any good, well-drained soil. Dislikes disturbance. May be propagated by seed sown in fall or spring; by semiripe cutings taken in summer; or by layering in winter.

A. lobata. See *A. trifoliata.*

A. longeracemosa. Twining, semievergreen climber. H 20ft (6m). Rounded leaves comprise 5 leaflets, to 3½in (9cm) long. In spring, produces racemes, to 7in (18cm) long, of vanilla-scented, brownish-purple flowers, followed by sausage-shaped, reddish-purple fruits. Z5–9

A.* x *pentaphylla illus. p.194.

A. quinata (Chocolate vine) illus. p.193. **'White Chocolate'** is a semievergreen, woody-stemmed climber. H 30ft (10m). Rounded leaves, with 5 leaflets, are dark green above, blue-green below, tinged purple in winter. Bears pendent racemes, to 5in (12cm) long, of purple-tinged, white flowers, with chocolate-brown filaments, in early spring, then dull, white fruits. Z4–9

A. trifoliata, syn. *A. lobata*, illus. p.204.

ALANGIUM

CORNACEAE

Genus of deciduous or evergreen trees and shrubs, grown for their foliage and flowers. Needs full sun and any fertile, well-drained soil. Propagate by sowing seed in spring or by taking softwood cuttings in summer.

A. platanifolium. Deciduous, upright, treelike shrub. H 10ft (3m), S 6ft (2m). Produces maplelike, 3-lobed, mid-green leaves. Fragrant, tubular, white flowers are borne from early to midsummer. Z7–8

ALBIZIA

MIMOSACEAE/LEGUMINOSAE

Genus of deciduous or semievergreen trees, grown for their feathery foliage and unusual flower heads, composed of numerous stamens and resembling bottlebrushes. Best against a warm, sunny wall; in cold regions, do not plant out until late spring. Needs full sun and well-drained soil. *A. julibrissin* may be grown as a summer bedding plant for its foliage. Propagate by seed in fall.

A. distachya. See *Paraserianthes lophantha.*

A. julibrissin (Silk tree). Deciduous, spreading, large shrub or small tree. H 12–25ft (4–8m), S 8–12ft (2.5–4m). Large, fernlike, light to mid-green leaves are divided into many leaflets. Bears clusters of fluffy, spherical, yellow-green flower heads, in late summer or fall. Z6–9.

f. *rosea* illus. p.86. **'Summer Chocolate'**, H 15ft (5m), S 12ft (4m), is a vigorous, widely arching selection with leaves that are bronze-green in spring, maturing to deep maroon-purple by midsummer, contrasting with the pinkish-purple, white-centered flowers; good for a large container or train against a wall.

A. lophantha. See *Paraserianthes lophantha.*

ALBUCA

ASPARAGACEAE

Genus of spring- or summer-flowering bulbs. Needs an open, sunny position and well-drained soil. Dies down in spring or late summer after flowering. Propagate by seed in spring or by offsets when dormant.

A. humilis illus. p.422.

A. shawii. Midsummer-flowering bulb. H 6–24in (15–60cm), S 3in (8cm). Has 6–12 narrowly linear leaves, 4–6in (10–15cm) long. Produces racemes of 3–9 narrowly bell-shaped, pendent yellow flowers, ⅝in (1.5cm) across. Z7–11

ALCEA

Hollyhock

MALVACEAE

Genus of biennials and short-lived perennials, grown for their tall spikes of flowers. Needs full sun and well-drained soil. Propagate by seed in late summer or spring. Rust may be a problem.

A. rosea, syn. *Althaea rosea.* Erect biennial. H 5–8ft (1.5–2.5m), S to 2ft (60cm). Has rounded, lobed, rough-textured leaves. Spikes of single flowers, in a range of colors, including pink, yellow and cream, are borne in summer and early fall. Z3–9. **Chater's Double Group**, H 6–8ft (2–2.5m), bears double flowers in several different colors in summer and early fall. **Halo Series** has flowers with a ring of contrasting color around the yellow center. **'Majorette'**, H 3ft (1m), S to 1ft (30cm), produces double flowers, in several different colors, in summer and early fall. **Summer Carnival Group** (annual or biennial), H 6–8ft (1.8–2.4m), S to 2ft (60cm), has double flowers in mixed colors.

ALCHEMILLA

Lady's mantle

ROSACEAE

Genus of perennials that produce sprays of tiny, greenish-yellow flowers, with conspicuous outer calyces, in summer. Some are good for groundcover. Grow in sun or partial shade, in all but boggy soils. Propagate by seed or division in spring or fall.

A. alpina (Alpine lady's mantle). Mound-forming perennial. H 3–5in (8–12cm), S 20in (50cm). Rounded, lobed, pale green leaves are covered in silky hairs. Bears upright spikes of tiny, greenish-yellow flowers, with conspicuous, green, outer calyces, in summer. Suitable for groundcover and a dry bank. Z3–7

A. conjuncta illus. p.275.

A. erythropoda. Clump-forming perennial. H 8–12in (20–30cm), S 8in (20cm). Has rounded, shallowly lobed, sharp-toothed, hairy, bluish-green leaves. Cymes of yellowish green flowers are produced from late spring to late summer. Z3–9

A. mollis (Lady's mantle) illus. p.275.

x ALICEARA

ORCHIDACEAE

See also ORCHIDS.

x *A.* Dark Warrior. Evergreen, epiphytic orchid for a cool greenhouse. H 10in (25cm). Produces sprays of wispy, mauve-brown, cream-yellow or green flowers, 1½in (4cm) across; flowering season varies. Leaves, 4in (10cm) long, are narrowly ovate. Grow in semishade in summer. Z15 (min. 59°F/15°C)

ALLAMANDA

SYN. ALLEMANDA

APOCYNACEAE

Genus of evergreen shrubs and woody-stemmed, scrambling climbers, grown for their trumpet-shaped flowers. Prefers partial shade in summer and humus-rich,

well-drained, neutral to acidic soil. Water regularly, less when not in full growth. Stems must be tied to supports. Prune previous season's growth back to 1 or 2 nodes in spring. Propagate by softwood cuttings in spring or summer. Whitefly and red spider mite may be troublesome. ⓘ Contact with sap may irritate skin; all parts may cause mild stomach upset if ingested.
A. cathartica (Golden trumpet).
'Hendersonii' illus. p.464.

ALLIUM

Onion

ALLIACEAE/LILIACEAE

Genus of perennials, some of which are edible, with bulbs, rhizomes or fibrous rootstocks. Nearly all have narrow, basal leaves smelling of onions when crushed, and most have small flowers packed together in a dense, spherical or shuttlecock-shaped umbel. Dried umbels of tall border species are good f or winter decoration. Requires an open, sunny situation and well-drained soil; best left undisturbed to form clumps. Plant in fall. Propagate by seed in fall or by division of clumps—spring-flowering varieties in late summer and summer-flowering ones in spring. ⓘ Contact with the bulbs may irritate skin or aggravate skin allergies.
A. acuminatum, syn. *A. murrayanum*, illus. p.416.
A. aflatunense illus. p.382.
A. aflatunense of gardens. See *A.* x *hollandicum*.
A. akaka illus. p.416.
A. albopilosum. See *A. cristophii*.
A. atropurpureum illus. p.392.
A. azureum. See *A. caeruleum*.
A. beesianum. Clump-forming, late-summer-flowering bulb. H to 8in (20cm), S 2in (5cm). Has linear, gray-green leaves and bears pendent heads of bell-shaped, blue flowers. Z6–10
A. caeruleum, syn. *A. azureum*, illus. p.411.
A. carinatum* subsp. *pulchellum, syn. *A. pulchellum*. Clump-forming, summer-flowering bulb. H 1–2ft (30–60cm), S 2in (5cm). Linear, semierect leaves sheathe lower two-thirds of stem. Has an umbel of pendent, cup-shaped, purple flowers. Z6–9
A. cernuum illus. p.409.
A. christophii. See *A. cristophii*.
A. cowanii. See *A. neapolitanum*.
A. cristophii, syn. *A. albopilosum*, illus. p.411.
A. cyaneum. Tuft-forming, summer-flowering bulb. H 4–10in (10–25cm), S 3in (8cm). Leaves are threadlike and erect. Stems each bear a small, dense umbel of 5 or more pendent, cup-shaped, blue or violet-blue flowers, ¼in (0.5cm) long. Z5–9
A. cyathophorum* var. *farreri illus. p.423.
A. flavum illus. p.412.
A. giganteum illus. p.392.
***A.* 'Gladiator'** illus. p.392.
***A.* 'Globemaster'** illus. p.392.
A.* x *hollandicum, syn. *A. aflatunense* of gardens. Tuft-forming, summer-flowering bulb. H 3ft (1m), S 4in (10cm). Has mid-green, basal leaves dying away by flowering time. Bears numerous star-shaped, purplish-pink flowers in a dense, spherical umbel, 4in (10cm) across. Z4–11
A. insubricum. Clump-forming, summer-flowering bulb. H 6–10in (15–25cm), S 2in (5cm). Has narrowly strap-shaped, mid-green, stem-sheathing leaves. Bears umbels of 3–5 pendent, bell-shaped, pink-purple flowers, followed by pendent seed heads. Often confused with *A. narcissiflorum*, which has more flowers and erect seed heads. Z7–9
A. kansuense. See *A. sikkimense*.
A. karataviense illus. p.416.
A. moly illus. p.424.
***A.* 'Mount Everest'** illus. p.385.
A. multibulbosum. See *A. nigrum*.
A. murrayanum. See *A. acuminatum*.
A. murrayanum of gardens. See *A. unifolium*.
A. narcissiflorum, syn. *A.pedemontanum* of gardens, illus. p.422.
A. neapolitanum, syn. *A. cowanii*, illus. p.399. **Cowanii Group** illus. p.409.
A. neriniflorum, syn. *Caloscordum neriniflorum, Nothoscordum neriniflorum*. Clump-forming, late summer-flowering bulb. H 4–10in (10–25cm), S 3–4in (8–10cm). Threadlike, semierect, basal leaves die down at flowering time. Each leafless stem bears a loose head of 10–20 small, funnel-shaped, pinkish-red flowers. Z3–8
A. nigrum, syn. *A. multibulbosum*. Clump-forming, summer-flowering bulb. H 14in (35cm), S 3in (8cm). Produces flattish umbels of 20–35 large, open cup-shaped flowers, usually creamy white, sometimes pale lilac, each with a prominent dark green ovary. Basal leaves are lance-shaped, gray-green. Z7–9
A. oreophilum, syn. *A. ostrowskianum*, illus. p.418.
A. ostrowskianum. See *A. oreophilum*.
A. pedemontanum of gardens. See *A. narcissiflorum*.
A. pulchellum. See *A. carinatum* subsp. *pulchellum*.
***A.* 'Purple Sensation'** illus. p.392.
A. rosenbachianum. Tuft-forming, summer-flowering bulb. H 3ft (1m), S 4in (10cm). Has ridged stems and gray-green straplike, basal leaves. Produces 50 or more star-shaped, deep purple flowers in a spherical umbel, 4in (10cm) across. Z6–9
A. schoenoprasum (Chives) illus. p.422.
A. schubertii illus. p.409.
A. senescens* var. *calcareum. See *A.s.* subsp. *montanum*. **subsp. *montanum*** (syn. *A.s.* var. *calcareum*) illus. p.409.
A. sikkimense, syn. *A. kansuense*. Tuft-forming, summer-flowering bulb. H 6–10in (15–25cm), S 4in (10cm). Leaves are linear, erect and basal. Up to 15 bell-shaped, blue flowers are borne in a small, pendent umbel, 1in (25cm) across. Z6–10
A. sphaerocephalon. Clump-forming, summer-flowering bulb. H 20–36in (50–90cm), S 3in (8cm). Has linear, semierect leaves on basal third of slender, wiry stems and a very dense umbel, ¾–1½in (2–4cm) across, of up to 40 small, bell-shaped, pinkish-purple flowers. Z4–11
A. stipitatum. Summer-flowering bulb. H to 3–4ft (1–1.5m), S 4in (10cm). Sturdy stems with straplike, semierect, basal leaves carry 50 or more star-shaped, purplish-pink flowers in a spherical umbel, 3–5in (8–12cm) across. Z4–9
A. tuberosum (Chinese chives). Clump-forming, late summer-to fall-flowering bulb. H 10–20in (25–50cm), S 2in (5cm). Has solid, linear, edible, basal and stem-sheathing leaves and star-shaped, fragrant white flowers borne in umbels. Z7–9
A. unifolium, syn. *A. murrayanum* of gardens, illus. p.402.

ALNUS

Alder

BETULACEAE

Genus of deciduous trees and shrubs, grown mainly for their ability to thrive in wet situations. Flowers are borne in catkins in late winter or early spring, the males conspicuous and attractive, the females forming persistent, woody, conelike fruits. Most do best in sun and any moist or even waterlogged soil, but *A. cordata* also grows well on poor, dry soils. Propagate species by seed sown in fall, cultivars by budding in late summer or by hardwood cuttings taken in early winter.
A. cordata (Italian alder). Fast-growing, deciduous, conical tree. H 80ft (25m), S 20ft (6m). Yellow, male catkins are produced in late winter and early spring, followed by heart-shaped, glossy, deep green leaves. Has persistent, round, woody fruits in fall. Z5–7
A. glutinosa (Black alder, Common alder). **'Aurea'** is a slow-growing, deciduous, conical tree. H 40ft (12m), S 15ft (5m). Has rounded leaves, bright yellow until midsummer, later becoming pale green. Produces yellow-brown catkins in early spring. Useful grown in a boggy area. **'Imperialis'** illus. p.75.
A. incana (Gray alder) illus. p.61. **'Aurea'** (syn. *A. i.*'Ramulis Coccineis') is a deciduous, conical tree. H 30ft (10m), S 15ft (5m). Has broadly ovate, yellow leaves, pale green in summer, and orange shoots and catkins in winter. Useful for cold, wet areas and poor soils. **'Ramulis Coccineis'** see *A. i.* 'Aurea'. Z2–6

ALOCASIA

ARACEAE

Genus of seasonally deciduous or evergreen perennials, usually with underground rhizomes, grown for their attractive foliage. Produces tiny flowers on a spadix enclosed in a leaflike spathe. Needs high humidity, partial shade and well-drained soil. Propagate by seed, stem cuttings or division of rhizomes in spring. ⓘ Contact with sap may irritate skin; all parts may cause mild stomach upset if ingested.
A.* x *amazonica. Rhizomatous perennial. H and S 3ft (1m). Has peltate, narrowly triangular, dark green leaves, to 2ft (60cm) long, with wavy, silvery-white margins, and leaf stalks to 2ft (60cm) long. Upper leaf surfaces have a metallic sheen and silvery-green veins; undersides are purple. Z9–12 (min. 59–64°F/15–18°C)
A. cuprea illus. p.472.
A. longiloba, syn. *A. lowii* var. *picta*, *A.l.* var. *veitchii*, *A. veitchii*. Very variable, evergreen, tufted perennial. H 2–5ft (60–150cm), S to 3ft (1m). Narrow leaves, triangular with arrow-shaped bases, are 18in (45cm) long and green with grayish midribs, veins and margins, purple below. Has greenish spathes. Z14–15. (min. 59–64°F/15–18°C)
A. lowii* var. *picta. See *A. longiloba*.
var. *veitchii* see *A. longiloba*.
A. macrorrhiza (Giant elephant's ear, Taro). Evergreen, tufted perennial with a thick, trunklike stem. H 12ft (4m), S 6–8ft (2–2.5m). Stalks 3ft (1m) long bear broad, arrow-shaped, glossy, green leaves, to 3ft (1m) long. Yellowish-green spathes are 8in (20cm) high. Z11. (min. 59–64°F/15–18°C)
A. veitchii. See *A. longiloba*.

ALOE

ASPHODELACEAE/LILIACEAE

Genus of evergreen, rosetted perennials. Some are shrublike or climbing, a few treelike, with succulent foliage and tubular to bell-shaped flowers. Tree aloes and shrubs with a spread over 1ft (30cm) prefer full sun; most smaller species prefer partial shade. Needs very well-drained soil. Propagate by seed, stem cuttings or offsets in spring or summer.
A. arborescens. Evergreen, treelike, many branched succulent. H 6–12ft (2–4m), S 6ft (2m). Stems are crowned by rosettes of widely spreading, long, slender, curved, dull blue-green leaves with toothed margins. Long flower stems bear abundant tubular to bell-shaped, red flowers 1½in (4cm) long in late winter and spring. Z11. (min. 50°F/10°C) **'Variegata'** (illus. p.493) has numerous spikes of red flowers in late winter and spring.
A. barbadensis. See *A. vera*.
A. brevifolia. Basal-rosetted succulent producing many offsets. H 4in (10cm), S indefinite. Has broadly sword-shaped, fleshy, blue-green leaves with a few teeth along edges. In spring, flower stems, 20in (50cm) long, carry narrowly bell-shaped, bright red flowers 1¼–1½in (3–4cm) long. Z10–11 (min. 41°F/5°C)
A. broomii. Basal-rosetted succulent. H 4in (10cm), S 12in (30cm). Ovate to lance-shaped, mid-green leaves have minutely toothed, red-brown margins and sharp, terminal spines. In summer, unbranched flower stems, to 3ft (1m) long, bear dense spikes of tubular, pale lemon flowers, ¾in (2cm) long. Z10–11 (min. 41°F/5°C)
A. ciliaris. See *Aloiampelos ciliaris*.
A. concinna. See *A. squarrosa*.
A. descoingsii. Clump-forming, basal-rosetted succulent. H 1½–2in (4–5cm), S indefinite. Triangular, dull green leaves have white-toothed margins and many raised, white spots. In summer, unbranched flower stems, 6in (15cm) long, produce urn-shaped, red-orange flowers, ¼in (7mm) long. Z13–15 (min. 50°F/10°C)
A. distans. Trailing succulent. H 20in (50cm), S indefinite. Has stems often 6–10ft (2–3m) long, which root at the nodes. Lance-shaped to broadly ovate, fleshy, white-spotted, bluish-green leaves, 3in (8cm) long, are sharply pointed and have horny, yellow marginal teeth. In winter, panicles, 16–24in (40–60cm) long, with 3 or 4 branches, bear cylindrical, red and yellow flowers, 1½in (4cm) long, in terminal clusters. Z9–12
A. erinacea. See *A. melanacantha* var. *erinacea*.

A. ferox (illus. p.493). Evergreen, treelike succulent. H 6–10ft (2–3m), S 5ft (1.5m). Has a woody stem crowned by a dense rosette of sword-shaped, blue-green leaves that have spined margins. Produces an erect spike of bell-shaped, orange-scarlet flowers in spring. Z10–11 (min. 50°F/10°C)
A. haworthioides (illus. p.493). Stemless succulent suckering to form clumps. H 2½in (6cm), S 4in (10cm). Has dense rosettes of lance-shaped, dark green leaves, suffused red in dry conditions, with many raised, white bristles and margins with small, white teeth set close together. Unbranched flower stems, 8–12in (15–30cm) long, bear bell-shaped, white to pale pink flowers, 3in (8cm) long, in summer. Z13–15 (min. 50°F/10°C)
A. hemmingii (illus. p.493). Basal rosetted, perennial succulent. H 6in (15cm), S 10in (25cm). Has a rosette of ovate to lance-shaped, olive green leaves, 4in (10cm) long, with dull, white streaks and short, sharp teeth at the margins. Produces unbranched flower stems, 12in (30cm) long, with tubular, minutely spotted, flamingo-pink to pale rose flowers, 1in (25cm) long, in summer. Z11 (min. 54°F/12°C)
A. humilis. Rosetted succulent. H 4in (10cm), S 12in (30cm). Has a dense, basal rosette of narrowly sword-shaped, spine-edged, fleshy, blue-green leaves, often erect, with incurving tips. Produces flower stems 12in (30cm) long, each bearing a spike of narrowly bell-shaped, orange flowers in spring 1½–1¾in (3.5–4.5cm) long. Offsets freely. Z10–11 (min. 50°F/10°C)
A. melanacantha* var. *erinacea, syn. *A. erinacea*. Slow-growing, clump-forming succulent. H 6in (15cm), S 12in (30cm). Compact rosettes of triangular to lance-shaped, dull-green leaves have sharp, black spines at the margins and a black spine at each tip. Unbranched flower stems, to 3ft (1m) long, produce dense, cylindrical clusters of bell-shaped, scarlet flowers, 1¼in (3cm) long, fading to yellow, in summer. Z10–11
A. microstigma. Basal-rosetted succulent. H 12in (30cm), S 10–24in (25–60cm). Lance-shaped to triangular, red-tinged, mid-green leaves, often white spotted, especially beneath, have reddish-brown margins with small, reddish-brown teeth. Unbranched flower stems, 2ft (60cm) long, bear conical racemes of bell-shaped, orange flowers, 10in (25cm) long, fading to greenish-yellow, in summer. Z10–11 (min. 50°F/10°C)
A. mitriformis. See *A. perfoliata*.
A. perfoliata, syn. *A. mitriformis*, *A. xanthacantha*. Variable, clump-forming succulent. H to 6ft (2m), S indefinite. Thick, nearly erect or horizontal stems bear terminal rosettes of ovate-lance-shaped, fleshy, bluish-green leaves, 18in (45cm) long, keeled beneath, suffused red in poor soils. Keel and leaf margins are yellow-toothed. Produces broadly conical, occasionally branched, axillary racemes, 16–24in (40–60cm) long, of tubular, dull scarlet flowers, 1½–2in (4–5cm) long, on branched stems in winter. Z9–12 (min. 50°F/10°C)
A. plicatilis. See *Kumara plicatilis*.
A. rauhii. Basal-rosetted succulent eventually forming dense clumps. H 4–6in (10–15cm), S indefinite. Unbranched stems, to 10in (25cm) long, of tubular, scarlet flowers, 1in (25cm) long, pale red to greenish toward mouths, are borne throughout the year. Lance-shaped, grayish or bright green leaves have many elongated, white spots and small, white teeth at the margins. In some forms, the leaves have raised dots or are almost white with green dots. Z11 (min. 50°F/10°C)
A. somaliensis. Basal-rosetted succulent. H 12in (30cm), S 10in (25cm). Lance-shaped, glossy olive-green leaves, 8–16in (20–40cm) long, with dull, white streaks, have short, sharp teeth at the margins. Branched flower stems, 1–2ft (30–60cm) long, with tubular, minutely spotted, flamingo-pink to pale rose flowers, 1in (25cm) long, are borne in summer. Z11 (min. 50°F/10°C)
A. squarrosa, syn. *A. concinna*. Prostrate succulent. H 12in (30cm), S 8in (20cm). Has lance-shaped, strongly recurved, toothed, white-speckled, mid-green leaves borne along short stems. Unbranched, pendulous flower stems, 4–10in (10–25cm) long, of tubular, red flowers, 1in (25cm) long, are produced in summer. Z11 (min. 50°F/10°C)
A. striata (illus. p.493). Basal-rosetted succulent. H 3ft (1m), S 34in (85cm). Has broad, blue-green leaves, with white margins and marks, that become suffused red in full sun. Produces reddish-orange flowers in spring. Good as a houseplant. Z10–11 (min. 50°F/10°C)
A. vera, syn. *A. barbadensis*, illus. p.492.
A. xanthacantha. See *A. perfoliata*.
A. zebrina. Basal-rosetted succulent. H 12in (30cm), S 32in (80cm). Lance-shaped, dull green leaves, with white chevrons, have sharp, brown teeth at the margins. Branched flower stems, 3ft (1m) long, of tubular, coral-red to dull red flowers, 1¼in (3cm) long, are produced in summer. Z10–11 (min. 50°F/10°C)

ALOIAMPELOS

ASPHODELACEAE

Genus of evergreen succulent perennial shrubs with sprawling or scrambling stems. Narrow, toothed leaves are arranged in spirals along the stems and racemes of small, narrow, cylindrical to tubular flowers are borne in summer. Requires a sunny site and well-drained soil. Propagate by seed, stem cuttings or by offsets in spring or summer.
A. ciliaris, syn. *Aloe ciliaris*. Climbing, perennial succulent. H 15ft (5m), S 1ft (30cm). Has a slender stem crowned by a rosette of narrow, green leaves and white teeth where leaf base joins stem. Bears bell-shaped, scarlet flowers, with yellow and green mouths, in spring. Z10–11 (min. 50°F/10°C)

ALOINOPSIS

AIZOACEAE

Genus of dwarf, tuberous, perennial succulents, bearing daisylike flowers from late summer to early spring. Needs a sunny site and very well-drained soil; in warm, dry areas grow in a raised bed or border. Very susceptible to overwatering. Mealy bugs may be a problem. Propagate by seed in summer.
A. schooneesii illus. p.488.

ALONSOA

SCROPHULARIACEAE

Genus of evergreen shrubs, subshrubs and perennials. May be used for cut flowers. Grow in sun and in rich, well-drained soil. Flowering may be poor outdoors in a wet summer. Pinch out growing shoots of young plants to promote bushy growth. Propagate by seed sown outdoors in late spring. Aphids may be troublesome, particularly under glass.
A. warscewiczii (Mask flower) illus. p.308.

ALOPECURUS

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES and SEDGES.
***A. pratensis* 'Aureovariegatus'**, syn. *A.p.* 'Aureomarginatus' (Golden foxtail), illus. p.289.

ALOYSIA

VERBENACEAE

Genus of deciduous or evergreen, summer-flowering shrubs, grown for their aromatic foliage and sprays of tiny flowers. Where marginally hardy, plant against a south- or west-facing wall or raise afresh each year. Needs full sun and well-drained soil. Cut out any dead wood in early summer. Propagate by softwood cuttings in summer.
A. triphylla, syn. *Lippia citriodora* (Lemon verbena), illus. p.132.

ALPINIA

ZINGIBERACEAE

Genus of rhizomatous, evergreen, perennials with fleshy rhizomes, grown for their flowers. Needs well-drained soil with plenty of humus, partial shade and a moist atmosphere. Not easy to grow successfully in containers. Propagate by division in late spring or early summer. Red spider mite may be a problem.
A. calcarata (Indian ginger). Evergreen, upright, clump-forming perennial. H 3ft (1m), S 1–2ft (30–60cm). Has stalkless, aromatic, lance-shaped leaves, to 1ft (30cm) long. At any time of year may bear horizontal spikes of whitish flowers, with 1in (25cm) long, yellow lips marked reddish-purple. Z14–15 (min. 61°F/16°C)
A. japonica. Clump-forming perennial. H 2ft (60cm), S 12in (30cm). Biennial stems arising from the rhizome, bear lance-shaped leaves, to 16in (40cm) long, hairy on the underside. From spring to summer, bears white flowers with red stripes in racemes, 6–12in (15–30cm) long, at the apex of the previous year's stems, followed by ovoid red capsules. Aerial stems may withstand light frost, but need protection during most winters if they are to bear flowers. Z8–11
A. nutans of gardens. See *A. zerumbet*.
A. purpurata (Cone ginger; illus. p.477). Vigorous, evergreen, upright perennial. H 10–12ft (3–4m), S 2–3ft (60–90cm). In summer, produces conelike spires, 14in (35cm) long, of many small, white flowers, to 1in (25cm) long, in the axils of persistent, red or pink bracts. Has stalked, oblong, hairless, mid-green leaves, to 3ft (90cm) long. Good for cut flowers. Z11 (min. 61°F/16°C)
A. speciosa. See *A. zerumbet*.
A. zerumbet, syn. *A. nutans* of gardens, *A. speciosa* (Shell flower, Shell ginger; illus. p.477). Evergreen, clump-forming perennial. H 10ft (3m), S 3–4ft (1–1.2m). Has racemes of white flowers, with yellow lips and pink- or red-marked throats, mainly in summer. Z12 (min. 45°F/7°C)

Alsobia. See *Episcia*.
Alsophila. See *Cyathea*.

ALSTROEMERIA

ALSTROEMERIACEAE

Genus of mostly summer- to fall-flowering, tuberous perennials with showy, funnel-shaped, multicolored flowers. Flowers are good for cutting as they last well. Produces erect stems with alternate or scattered, linear to lance-shaped, mid- to gray-green leaves, usually 3–5in (7–12cm) long, held on twisted leaf stalks. Where marginally hardy, protect dormant tubers with a dry mulch. Needs sun and well-drained soil. Propagate by seed or division in early spring. ⚠ Contact with foliage may aggravate skin allergies.
***A.* 'Apollo'** (illus. p.387). Midsummer to fall-flowering, tuberous perennial. H 3ft (1m), S 5ft (1.5m). Bears large, open, white flowers with brown markings and yellow throats. Z7–10.
A. aurantiaca. See *A. aurea*.
A. aurea, syn. *A. aurantiaca*. Summer-flowering, tuberous perennial. H 3ft (1m), S 18in (45cm). Produces orange flowers, tipped with green and streaked dark red. Z7–10. **'Orange King'** (illus. p.387) bears bright orange flowers, with brown-speckled throats, from midsummer to fall.
***A.* 'Blushing Bride'** (illus. p.387). Midsummer- to fall-flowering, tuberous perennial. H and S 2ft (60cm). Produces cream flowers with brown-speckled, pink and pale yellow throats. Z7–10
***A.* 'Cahors'.** Midsummer-flowering, tuberous perennial. H 28in (70cm), S 2ft (60cm). Produces rich pink flowers with dark red-flecked, yellow throats. Z7–10
***A.* 'Charm'.** Midsummer-flowering, tuberous perennial. H 2½ft (75cm), S 2ft (60cm). Has pale peach flowers with brown speckles and primrose-yellow throats. Z7–10
***A.* 'Elvira'** (illus. p.387). Midsummer- to fall-flowering, tuberous perennial. H 2½ft (75cm), S 2ft (60cm). Produces cream flowers with bold, pink flecks on outer edges of petals and at the throats. Z7–10
***A.* 'Friendship'** (illus. p.387). Midsummer- to fall-flowering, tuberous perennial. H 3ft (90cm), S 20in (50cm). Produces pale lime-yellow flowers with brown-red speckled, yellow throats. Z7–10.
A. hookeri illus. p.361.
***A.* Inca Ice ('Koice')** (illus. p.387). Late-spring- to fall-flowering, tuberous perennial. H and S to 3ft (1m). Produces cream and pale yellow flowers with pink throats and purple-brown speckling on the upper and lower petals. Z7–10
***A.* Inca Tropic ('Kotrop')** (illus. p.387). Midsummer- to fall-flowering, tuberous

perennial. H and S 18in (45cm). Produces orange flowers with yellow throats flecked with brown markings. Young leaves are brown tinged. Z7–10.
***A.* 'Koice'.** See *A.* Inca Ice.
***A.* 'Kotrop'.** See *A.* Inca Tropic.
***A.* Ligtu Hybrids** illus. p.413.
***A.* 'Little Miss Tara'.** Midsummer to fall-flowering, tuberous perennial. H and S 6in (15cm). Produces relatively large reddish-pink flowers with brown markings and yellow throats. Z7–10
***A.* 'Moulin Rouge'** (illus. p.387). Midsummer to fall-flowering, tuberous perennial. H and S 18in (45cm). Produces soft red flowers with dark brown-speckled, yellow throats. Z7–10
***A.* 'Orange Glory'.** Robust, upright, summer-flowering tuberous perennial. H and S 3ft (90cm). Bears dark orange flowers with deep yellow, orange-tipped throats with brown markings. Z7–10
***A. pelegrina*.** Summer-flowering, tuberous perennial. H 1–2ft (30–60cm), S to 2ft (60cm). Each leafy stem has 1–3 white flowers, stained pinkish-mauve and spotted yellow and brownish-purple. Z8–10.
***A.* 'Phoenix'.** Vigorous, summer-flowering tuberous perennial. H 26in (65cm), S 12in (30cm). Produces bright magenta flowers with brown-flecked yellow throats and mid-green, often pink-flushed leaves, edged white. Z8–10
***A.* Princess Ariane ('Zapriari')** (illus. p.387). Midsummer to fall-flowering, tuberous perennial. H 8in (20cm), S 6in (15cm). Produces yellow-flowers with purple-marked petal tips and dark brown speckled throats. Z7–10
***A.* Princess Julieta ('Zapriju')** (illus. p.387). Midsummer to fall-flowering, tuberous perennial. H and S 12in (30cm). Produces pale purple flowers with darker purple markings and white throats. Z7–10
***A.* Princess Paola ('Stapripal').** Midsummer to fall-flowering, tuberous perennial. H 10in (25cm), S 8in (20cm). Produces pale pink flowers with dark pink markings and dark-brown-speckled, yellow throats. Z7–10
A. psittacina, syn. *A. pulchella*. Summer-flowering, tuberous perennial. H 3ft (1m), S 1½ft (45cm). Mauve-spotted stems bear open umbels of red-marked, green flowers. Z8–10. **'Royal Star'** has leaves irregularly margined creamy-white.
***A.* 'Red Beauty'** (illus. p.387). Midsummer to fall-flowering, tuberous perennial. H 3ft (1m), S 2½ft (75cm). Bears bright scarlet flowers with dark brownish-black-speckled, yellow throats. Z7–10
***A.* 'Sonata'.** Summer-flowering, tuberous perennial. H and S 3ft (1m). Has red flowers with green-margined, yellow, purple-marked throats. Z8–10
***A.* 'Tara'** (illus. p.387). Late spring to fall-flowering, tuberous perennial. H 4–12in (10–30cm), S 12in (30cm). Produces dark brownish-black-speckled, red flowers with yellow throats. Z7–10
***A.* 'Stapripal'.** See *A.* Princess Paola.
***A.* 'Walter Fleming'.** Summer-flowering, tuberous perennial. H 2ft (60cm), S 8in (20cm). Each leafy stem produces narrowly lance-shaped, twisted leaves and widely funnel-shaped, deep yellow flowers, 2–2½in (5–6cm) across, flushed purple with reddish-purple spots. Z8–11
***A.* 'Yellow Friendship'.** Summer-flowering, vigorous, tuberous perennial. H 5⁄8in (1.5cm), S 2ft (60cm). The bright yellow flowers have dark yellow throats with dark brown streaks. Z8–10
***A.* 'Zapriari'.** See *A.* Princess Ariane.
***A.* 'Zapriju'.** See *A.* Princess Julieta.

ALTERNANTHERA

AMARANTHACEAE

Genus of bushy annuals and perennials, grown for their attractive, colored foliage. Useful for carpeting or bedding. Needs sun or partial shade and moist but well-drained soil. Propagate by tip cuttings or division in spring.
***A. amoena*.** See *A. ficoidea* 'Amoena'.
***A. dentata* 'Purple Knight'** (Joseph's coat) illus. p.310.
A. ficoidea (Parrot leaf). **'Amoena'** (syn. *A. amoena*) is a mat-forming perennial. H to 2in (5cm), S indefinite. Has narrowly ovate, green leaves, marked red, yellow and orange, with wavy margins.
'Versicolor' (syn. *A. versicolor*) is an erect form, H and S to 12in (30cm), with rounded to spoon-shaped brown, red and yellow leaves. Z11 (min. 41°F/5°C)
***A. versicolor*.** See *A. ficoidea* 'Versicolor'.

***Althaea rosea*.** See *Alcea rosea*.

ALYSSOIDES

BRASSICACEAE/CRUCIFERAE

Genus of one species of short-lived, evergreen subshrub, grown for its flowers and swollen fruits. Particularly suitable for dry banks and rock gardens. Needs sun and well-drained soil. Propagate by seed sown in fall.
***A. utriculata*.** Evergreen, rounded subshrub. H and S 12in (30cm). Has ovate, glossy, dark green leaves. Loose sprays of small, bright yellow flowers, which are produced in spring, are followed by balloonlike, buff seed pods. Z6–9

ALYSSUM

BRASSICACEAE/CRUCIFERAE

Genus of annuals, and evergreen subshrubs and perennials, grown mainly for their 4-petaled flowers. Requires a sunny site and well-drained soil. Cut back lightly after flowering. Propagate either by softwood cuttings taken in late spring or by seed sown in fall.
***A. maritimum*.** See *Lobularia maritima*.
***A. montanum*.** Evergreen, prostrate perennial. H 4–6in (10–15cm), S to 20in (50cm) or more. Leaves are small, ovate, hairy and gray. Flower stems, 6in (15cm) long, each bear an open, spherical raceme carrying small, highly fragrant, soft yellow flowers in early summer. A good plant for a rock garden. Z4–9
***A. saxatile*.** See *Aurinia saxatilis*.
A. spinosum, syn. *Ptilotrichum spinosum*. Semievergreen, rounded, compact shrub. H and S 12–20in (30–50cm). Intricate branches bear spines and narrowly ovate to linear, silver leaves. Spherical heads of tiny, 4-petaled, white to purple-pink flowers are produced in early summer. Z5–9. **var. *roseum*** has pale to deep rose-pink flowers.
***A. wulfenianum*.** Erect or prostrate, tufted, evergreen perennial. H 4–6in (10–15cm), S to 20in (50cm). Loose heads of small, bright yellow flowers are produced in summer above small, ovate, gray- or white-hairy leaves. Z6–9

AMARANTHUS

AMARANTHACEAE

Genus of annuals or short-lived perennials, grown for their dense panicles of tiny flowers or their colorful foliage. Grow in a sunny position in rich or fertile, well-drained soil. Propagate from seed sown outdoors in late spring. Aphids may be a problem.
A. caudatus (Love-lies-bleeding, Tassel flower) illus. p.307.
A. hypochondriacus (Prince's feather) illus. p.308. **'Pygmy Torch'**, is a dwarf, bushy annual. H 12–18in (30–45cm), S 12in (30cm). Produces purple leaves and erect, sometimes flattened cymes of maroon flowers. Z3–10
***A. tricolor* cultivars** (Chinese spinach, Tampala). Erect, bushy annuals grown for their foliage. H 4½ft (1.3m), S 12–18in (30–45cm). Leaves are ovate or elliptic, sometimes lance-shaped, multi-colored, and to 8in (20cm) or more long. They vary in color from green or purple to brilliant crimson or maroon, often suffused with gold, rose-pink, and bronze in the different cultivars. Insignificant green or red flowers are borne in often thickened and flattened, terminal or axillary cymes, from summer to early fall. Z3–10. **'Flaming Fountains'** produces willowlike, lance-shaped carmine-red, crimson, and bronze leaves. **'Illumination'**, H to 18in (45cm), has ovate to elliptic, bright rose-red upper leaves topped with gold, and copper-brown lower leaves. **'Joseph's Coat'** has ovate to elliptic, crimson and gold upper leaves, and lower leaves in a mix of green, yellow, and chocolate-brown.

x AMARCRINUM

syn. x CRINODONNA

AMARYLLIDACEAE

Hybrid genus (*Amaryllis* x *Crinum*) of one robust, evergreen bulb, grown for its large, showy, funnel-shaped flowers. Needs a sunny position and well-drained soil. Plant with neck just covered by soil. Propagate by division in spring.
x *A. memoria-corsii*, syn. x *Crinodonna corsii*. Robust, evergreen, clump-forming bulb. H 3ft (1m), S 2ft (60cm). Produces wide, semierect, strap-shaped, basal leaves. Sturdy stems bear fragrant, rose-pink flowers in loose heads in late summer and fall. Z9–11

x AMARYGIA

syn. x BRUNSDONNA

AMARYLLIDACEAE

Hybrid genus (*Amaryllis* x *Brunsvigia*) of sturdy, fall-flowering bulbs, cultivated for their large, showy flowers, borne before the leaves in fall. Needs full sun and, preferably, the shelter of a warm wall. Plant bulbs just beneath the surface of well-drained soil. Propagate by division in spring.
x *A. parkeri*, syn. x *Brunsdonna parkeri*. Early fall-flowering bulb. H to 3ft (1m), S 12in (30cm). Sturdy stem bears a large head of funnel-shaped, deep rose flowers with yellow and white throats. Produces strap-shaped, semierect, basal leaves after flowering. Z9–11

AMARYLLIS

AMARYLLIDACEAE

Genus of one species of fall-flowering bulb, grown for its showy, funnel-shaped flowers. Where marginally hardy, should be grown against a south-facing wall for protection. Requires well-drained soil and a sheltered, sunny situation.
Plant bulbs in at least 3in (8cm) of soil. Propagate by division in late spring as leaves die down, or in late summer, before growth recommences.
A. belladonna (Belladonna lily) and **'Hathor'** illus. p.395.

AMBERBOA

Sweet sultan

ASTERACEAE/COMPOSITAE

Genus of erect annuals or biennials, grown for their cornflower-like flower heads, which are borne from spring to fall, and are good for cutting. Needs full sun and moderately fertile, well-drained soil. Deadhead to prolong flowering. Propagate by seed in spring or fall.
A. moschata, syn. *Centaurea moschata* (Sweet sultan). Fast-growing, upright, slender-stemmed annual. H 2ft (60cm), S 9in (23cm). Has lance-shaped, grayish-green leaves and large, fragrant flower heads, in a range of colors, in summer and early fall. Z7–10. **'The Bride'** has almond-scented, creamy-white flowers.

AMELANCHIER

Juneberry, Serviceberry, Shadbush

ROSACEAE

Genus of deciduous, spring-flowering trees and shrubs, grown primarily for their profuse flowers and their foliage, which is frequently brightly colored in fall. Requires sun or semishade and well-drained but not too dry, preferably neutral to acidic soil. Propagate in fall by seed, in late fall to early spring by layering or, in the case of suckering species, by division. Fireblight may sometimes be troublesome.
***A. alnifolia*.** Deciduous, upright, suckering shrub. H and S 12ft (4m). Leaves are ovate to rounded and dark green. Erect spikes of star-shaped, creamy-white flowers are borne in late spring, followed by small, edible, juicy, rounded, purple-black fruits. Z4–9
***A. arborea*.** Deciduous, spreading, sometimes shrubby, tree. H 30–40ft (10–12m), S 30ft (10m). Clusters of star-shaped, white flowers are produced in midspring as ovate, white-haired, young leaves unfold. Foliage matures to dark green, turning to red or yellow in fall. Rounded fruits are small, dry and reddish-purple. Z4–9
***A. asiatica*.** Deciduous, spreading tree or shrub of elegant habit. H 25ft (8m), S 30ft (10m). Leaves are ovate and dark green,

usually woolly when young and turning yellow or red in fall. Star-shaped, white flowers are borne profusely in late spring, followed by edible, juicy, rounded, black-currant-like fruits. Z5–7

A. canadensis. Deciduous, upright, dense shrub. H 20ft (6m), S 10ft (3m). Star-shaped, white flowers are borne from mid- to late spring amid unfolding, ovate, white-haired leaves that mature to dark green and turn orange-red in fall. Fruits are edible, rounded, blackish-purple, sweet, and juicy. Z3–7

A.* x *grandiflora. Spreading, sometimes shrubby tree. H 25ft (8m), S 30ft (10m). Produces ovate leaves, bronze on emergence, with hairy undersides, turning green in late spring, then orange and red in fall. Pendent racemes of white flowers are produced in midspring, followed by sweet, juicy, blue-black fruit. Z4–9. **'La Paloma'**, H and S 6ft (2m), forms a large, mounded shrub. Producs very attractive pure white flowers and contrasting coppery young leaves with good fall color. Z4–9. **'Princess Diana'** bears abundant, pure white flowers with unfolding pale bronze leaves in early spring. **'Robin Hill'**, H 26ft (8m), S 16ft (5m), is compact and broadly upright, with white flowers and pink-tinged buds.

A. laevis illus. p.81.

A. lamarckii illus. p.110.

Amomyrtus luma. See *Luma apiculata*.

***Amomyrtus luma* 'Glanleam Gold'.** See *Luma apiculata* 'Glanleam Gold'.

AMORPHA

PAPILIONACEAE/LEGUMINOSAE

Genus of deciduous shrubs grown for their flowers and foliage. A useful plant for cold, dry, exposed positions. Requires full sun and well-drained soil. May be propagated by softwood cuttings taken in summer or by seed sown in fall.

A. canescens (Lead plant). Deciduous, open shrub. H 3ft (1m), S 5ft (1.5m). Dense spikes of tiny, pealike, purple flowers, with orange anthers, are produced in late summer and early fall, amid ovate, gray-haired leaves divided into 21–41 narrowly ovate leaflets. Z2–8

AMORPHOPHALLUS

ARACEAE

Genus of tuberous perennials, cultivated for their huge and dramatic, but foul-smelling, spathes, which surround tiny flowers on sturdy spadices. Requires partial shade and humus-rich soil kept continuously moist during the growing season. Keep tubers dry in winter. Propagate by seed sown in spring or by offsets in spring or summer.

A. konjac, syn. *A. rivieri.* Summer-flowering, tuberous perennial. H 3–4½ft (1–1.3m), S 6ft (2m). Produces a flattish, wavy-edged, dark reddish-brown spathe, to 16in (40cm) long, from which protrudes an erect, dark brown spadix. Brownish-green-mottled, pale green stem, 3ft (1m) long, bears one large, lobed leaf after flowering. Z13–15 (min. 55–61°F/13–16°C)

A. rivieri. See *A. konjac*.

AMPELODESMOS

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES AND SEDGES.

A. mauritanicus illus. p.287.

AMPELOPSIS

VITACEAE

Genus of deciduous, woody-stemmed, tendril climbers, some twining, grown for their leaves. Grow in a sheltered site, in sun or partial shade in any soil. Give plenty of room, as grows quickly and covers a large area. Propagate by semiripe or greenwood cuttings in midsummer.

A. aconitifolia, syn. *Vitis aconitifolia.* Fast-growing, deciduous, woody-stemmed, twining, tendril climber. H 40ft (12m). Rounded leaves have toothed, lobed, dark green leaflets. Inconspicuous greenish flowers, in late summer, are followed by orange berries. Z5–8.

A. brevipedunculata, syn. *A. glandulosa,* illus. p.210. **'Elegans'** illus. p.195. **var. *maximowiczii*** (syn. *A. heterophylla, Vitis heterophylla*) is a deciduous, woody-stemmed, tendril climber. H 70ft (20m). Has very variable leaves, sometimes not lobed and broadly heart-shaped at the bases, sometimes shallowly 3-lobed, or deeply cut into 3–5 lobes. Z5–8.

A. glandulosa. See *A. brevipedunculata.*

A. heterophylla. See *A. brevipedunculata* var. *maximowiczii.*

A. megalophylla illus. p.210.

A. sempervirens. See *Cissus striata.*

A. veitchii. See *Parthenocissus tricuspidata* 'Veitchii'.

AMSONIA

Blue star

APOCYNACEAE

Genus of slow-growing, clump-forming, summer-flowering perennials. Grow in full sun and in well-drained soil. Best left undisturbed for some years. Propagate by division in spring, by softwood cuttings in summer or by seed in fall. ⓘ Contact with the milky sap may irritate skin.

A. orientalis, syn. *Rhazya orientalis*, illus. p.270.

A. tabernaemontana (Willow bluestar). Clump-forming perennial. H 2ft (60cm), S 18in (45cm). Leaves are small and narrow. Willowy stems bear drooping clusters of small, tubular, pale blue flowers in summer. Z3–9.

Amygdalus. See *Prunus*.

ANACAMPTIS

ORCHIDACEAE

See also ORCHIDS.

A. morio, syn. *Orchis morio* (Gandergoose, Green-veined orchid; illus. p.466). Deciduous, terrestrial orchid. H 6–12in (15–30cm). Reddish-purple, mauve or rarely white flowers, ½in (1cm) long, with green veins on cupped sepals, open along stems in spring. Has a basal cluster of lance-shaped or broadly oblong, pale to mid-green leaves, 4–6in (10–16cm) long. Requires sun or semishade. Z12–15.

ANACYCLUS

ASTERACEAE/COMPOSITAE

Genus of summer-flowering, prostrate annuals and herbaceous perennials with stems radiating from a central rootstock. Needs full sun and well-drained soil. Propagate by softwood cuttings in spring or by seed in fall.

A. depressus. See *A. pyrethrum* var. *depressus.*

A. pyrethrum* var. *depressus, syn. *A. depressus*, illus. p.360.

ANAGALLIS

PRIMULACEAE

Genus of creeping or low-growing annuals and evergreen perennials, grown for their flowers. Needs an open, sunny site and fertile, moist soil. Propagate by seed or division in spring. Raise *A. tenella* 'Studland' by soft-tip cuttings in spring or early summer.

***A. monellii* 'Gentian Blue'.** Bushy, compact perennial. H 6in (15cm), S to 16in (40cm). Branching stems bear stalkless, lance-shaped to elliptic leaves in opposite pairs or 3s. Produces deep blue, saucer-shaped flowers, ⅝in (1.5cm) across, on long stalks in summer. Z9–11

***A. tenella* 'Studland'** illus. p.353.

ANANAS

BROMELIACEAE

Genus of evergreen, rosette-forming perennials, grown for their foliage and edible fruits (pineapples). Prefers full light, but tolerates some shade. Needs fertile, well-drained soil. Water moderately in growth; sparingly at other times. Propagate by suckers or cuttings of "leafy" fruit tops in spring or summer.

A. bracteatus (Red pineapple, Wild pineapple). **'Tricolor'** (syn. *A.b.* 'Striatus', *A.b.* var. *tricolor*; illus. p.471) is a basal-rosetted, evergreen perennial. H to 28in (70cm), S 20in (50cm). Forms dense rosettes of strap-shaped, spiny-edged, arching, deep green leaves, longitudinally yellow-striped, often with marginal, red spines. Bears dense spikes of small, tubular, lavender-violet flowers with prominent, reddish-pink bracts, usually in summer. Brownish-orange-red fruits are 6in (15cm) or more long. Z15. (min. 59°F/15°C)

***A. comosus* 'Variegatus'**. Evergreen, basal-rosetted perennial. H 36in (100cm), S 20in (50cm). Very narrowly strap-shaped, channelled, rigid, gray-green leaves are suffused pink with cream margins, gray-scaled beneath, and sometimes have spiny edges. Produces tubular, purple-blue flowers with inconspicuous, green bracts; fruits are the edible pineapples grown commercially, but are much smaller on pot-grown plants. Z11. (min. 59°F/15°C)

ANAPHALIS

Pearl everlasting

ASTERACEAE/COMPOSITAE

Genus of spreading to upright perennials, some evergreen, with heads of small, papery flowers, used dried for winter decoration. Prefers sun but tolerates semishade. Soil should be well-drained but not too dry. Propagate by seed in fall or division in winter or spring.

A. margaritacea (Pearl everlasting) illus. p.231.

A. nepalensis* var. *monocephala, syn. *A. nubigena* of gardens. Dwarf, leafy perennial. H 32–36in (80–90cm), S 18–24in (45–60cm). Woolly, silvery stems bear lance-shaped leaves. In late summer has dense, terminal clusters of white flower heads. Z5–8.

A. nubigena of gardens. See *A. nepalensis* var. *monocephala*.

A. triplinervis. Variable, clump-forming perennial. H 32–36in (80–90cm), S 18–24in (45–60cm). Has obovate to elliptic, white-woolly leaves, prominently 3-veined. In mid- to late summer produces clusters of white-bracted, yellow-centered flower heads. Z5–8. **'Sommerschnee'** (syn. *A.t.* Summer Snow) illus. p.231.

ANAPHALIOIDES

Pearl everlasting

ASTERACEAE/COMPOSITAE

Genus of low-growing, alpine subshrubs, grown for their "everlasting" flower heads and silver foliage. Requires full sun and very well drained soil. Propagate by heel or semiripe cuttings in summer.

A. bellidioides, syn. *Helichrysum bellidioides.* Evergreen, prostrate shrub. H 6in (15cm), S 2ft (60cm). Has small, rounded, fleshy, dark green leaves and, in early summer, terminal clusters of daisylike, white flower heads. Z7–9

ANCHUSA

BORAGINACEAE

Genus of annuals, biennials and perennials, some of which are evergreen, usually with blue flowers, which are attractive to bees. Requires sun and well-drained soil; resents too much winter wet. Tall perennial species may need to be staked and given room to spread. Propagate perennials by root cuttings in winter, annuals and biennials by seed in fall or spring.

A. azurea, syn. *A. italica.* **'Little John'** is a clump-forming perennial. H 18in (45cm), S 12in (30cm). Mainly basal leaves are narrowly ovate and hairy. Bears branching racemes of large, open cup-shaped, dark blue flowers in early summer. **'Loddon Royalist'** illus. p.241. **'Opal'**, H 4ft (1.2m), has paler blue flowers. Z3–8.

A. caespitosa. See *A. cespitosa.*

***A. capensis* 'Blue Angel'** illus. p.315. **'Blue Bird'** is a bushy biennial, grown as an annual. H to 18in (45cm), S 6–9in (15–23cm). Has lance-shaped, bristly, mid-green leaves and, in summer, shallowly bowl-shaped, sky-blue flowers. Z7–9.

A. cespitosa, syn. *A. caespitosa*, illus. p.356.

A. italica. See *A. azurea.*

Ancistrocactus. See *Sclerocactus.*

ANDROMEDA

ERICACEAE

Genus of evergreen shrubs with an open, twiggy habit. Needs full light and humus-rich, moist, acidic soil. Propagate by

semiripe cuttings taken in late summer or by seed sown in spring.
A. polifolia. Evergreen, open, twiggy shrub. H to 16in (40cm), S to 2ft (60cm). Has narrow, leathery, glossy, mid-green leaves. Bears terminal clusters of pitcher-shaped, pink flowers in spring and early summer. Z2–6. **'Alba'** illus. p.332. **'Compacta'** illus. p.333. **'Macrophylla'**, H 2–6in (5–15cm), S 10in (25cm), is low-growing, with broadly ovate, dark green leaves and numerous deep pink and white flowers, slightly larger and more rounded than the species.

ANDROSACE

PRIMULACEAE

Genus of annuals, biennials and predominantly evergreen perennials, usually compact cushion-forming and often with soft, hairy leaves. Many species are suitable for cold greenhouses and troughs with winter cover. Needs sun and very well-drained soil; some species prefer acidic soil. Resents wet foliage in winter. Propagate by tip cuttings in summer or by seed in fall. Prone to botrytis and attack by aphids.
A. carnea illus. p.350. **subsp. *laggeri*** illus. p.353.
A. chamaejasme. Evergreen, basal-rosetted, variable perennial with easily rooted stolons. H 1¼–2½in (3–6cm), S 6–8in (15–20cm). Produces ovate, hairy leaves and, in spring, clusters of 2–8 flattish, white flowers, each with a yellow eye that sometimes turns red with age. Z4–7.
A. cylindrica. Evergreen, basal-rosetted perennial. H ½–¾in (1–2cm), S 4–6in (10–15cm). Leaves are linear and glossy. Flower stems each carry up to 10 small, flattish, white flowers, each with a yellow-green eye, in early spring. Suitable for a cold greenhouse. Z6–7.
A. hedraeantha. Evergreen, cushion-forming perennial. H ½–¾in (1–2cm), S to 4in (10cm). Has loose rosettes of narrowly ovate, glossy leaves, and bears umbels of 5–10 flattish, yellow-throated, pink flowers in spring. Best in a cold greenhouse. Z6–7.
A. hirtella. Evergreen, tight cushion-forming perennial. H ½in (1cm), S to 4in (10cm). Has rosettes of small, thick, linear to oblong, hairy leaves. Almond-scented, flattish, white flowers are borne in spring on very short stems, 1 or 2 per rosette. Z6–8.
A. imbricata. See *A. vandellii*.
A. lanuginosa illus. p.363.
A. pyrenaica illus. p.350.
A. sarmentosa. Evergreen, mat-forming perennial, spreading by runners. H 2–4in (5–10cm), S to 12in (30cm). Has open rosettes of small, narrowly elliptic, hairy leaves. Large clusters of flattish, yellow-eyed, bright pink flowers are produced in spring. A good rock plant in all but very wet areas. Z5–7.
A. sempervivoides. Evergreen, mat-forming, rosetted perennial with stolons. H 1–2in (2.5–5cm), S 6–8in (15–20cm). Has leathery, oblong or spoon-shaped leaves. In spring, produces small heads of 4–10 flattish, pink flowers, with yellow, then red, eyes. A good rock plant. Z5–7.
A. vandellii, syn. *A. imbricata*, illus. p.347.
A. villosa illus. p.349. **var. *jacquemontii*** illus. p.366.

ANEMANTHELE

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES and SEDGES.
A. lessoniana, syn. *Stipa arundinacea* (Pheasant's-tail grass), illus. p.289.

ANEMONE

Windflower

RANUNCULACEAE

Genus of spring-, summer- and fall-flowering perennials, sometimes tuberous or rhizomatous, with mainly rounded, shallowly cup-shaped flowers. Leaves are rounded to ovate, often divided into 3–15 leaflets. Most thrive in full light or semishade in humus-rich, well-drained soil. Propagate by division in spring, by seed sown in late summer, when fresh, or by root cuttings in winter. ⓘ Contact with the sap may irritate skin.
A. apennina (Apennine anemone). Spreading, spring-flowering, rhizomatous perennial. H 8in (20cm), S 12in (30cm). Fernlike leaves have 3 deeply toothed lobes. Each stem bears a large, upright, flattish, blue, white or pink flower, with 10–20 narrow petals. Z5–9.
A. blanda. Spreading, early spring-flowering perennial with a knobbly tuber. H and S 6in (15cm). Leaves are broadly ovate and semierect, with 3 deeply toothed lobes. Each stem bears an upright, flattish, blue, white or pink flower, 1½–2in (4–5cm) across, with 9–14 narrow petals. Z4–8. **'Atrocaerulea'** illus. p.419. **'Ingramii'** bears purple-backed, deep blue flowers. **var. *rosea* 'Radar'**, syn. *A.b.* 'Radar', illus. p.418. **'Violet Star'** illus. p.418. **'White Splendour'** illus. p.414.
A. coronaria. Spring-flowering perennial with a misshapen tuber. H 12–18in (30–45cm), S 6in (15cm). Produces parsleylike, divided, semierect leaves. Each stiff stem bears a large, 5–8-petaled, shallowly cup-shaped flower in shades of red, pink, blue or purple. Z8–11. Garden groups include **De Caen Group** and **Saint Bridgid Group**, which have larger flowers varying in color from white through red to blue. **'Mister Fokker'** illus. p.403.
A.* x *fulgens illus. p.418.
A. hepatica. See *Hepatica nobilis*.
A. hupehensis. Erect perennial with a creeping, woody-based rootstock. H 24–36in (60–90cm), S 16in (40cm) or more. Large, rounded, dark green leaves have 3 toothed lobes. In late summer, flower stems produce smaller leaves and 5-petaled, slightly cupped, pale pink or white flowers, 2–2½in (5–6cm) across, with yellow stamens. Z5–7. **'Bowles's Pink'** (illus. p.222) has rich purple-pink flowers. **'Hadspen Abundance'** illus. p.247. **var. *japonica* 'Bressingham Glow'** (syn. *A.* x *hybrida* 'Bressingham Glow'; illus. p.222), H 4–5ft (1.2–1.5m), S 2ft (60cm), bears semidouble, rose-purple flowers on wiry stems. **var. *japonica* 'Pamina'** (illus. p.222), H 32in (80cm), produces abundant, rather small, semidouble, reddish-purple flowers. **var. *japonica* 'Prinz Heinrich'** (syn. *A.* x *hybrida* 'Prince Henry') bears single, deep pink flowers on slender stems. **'Praecox'** (illus. p.222), H 32in (80cm), bears single, pink flowers in summer. **'Rotkäppchen'**, H 32–48in (80–120cm), is compact, with deep reddish-pink flowers. **'September Charm'** see *A.* x *hybrida* 'September Charm'.
A.* x *hybrida, syn. *A. japonica* of gardens (Japanese anemone). Group of vigorous, branching, perennials. H 4–5ft (1.2–1.5m), S indefinite. Bears shallowly cup-shaped, single, semidouble or double flowers in late summer and early fall. Leaves are deeply divided and dark green. Z4–8. **'Bressingham Glow'** see *A. hupehensis* var. *japonica* 'Bressingham Glow'. **'Elegans'** (syn. *A.* x *h.* 'Max Vogel') has semidouble, pinkish-mauve flowers on wiry stems. '**Honorine Jobert'** (single) illus. p.220. **'Königin Charlotte'** (illus. p.222), H 5ft (1.5m), has large, semidouble, bright pink flowers. **'Lady Gilmour'**, H 3ft (1m), produces crested leaves and pink flowers with often uneven, twisted petals. **'Lady Gilmour'** of gardens, see *A.* x *h.* 'Montrose'. **'Margarete'** of gardens, see *A.* x *h.* 'Montrose'. **'Max Vogel'** see *A.* x *h.* 'Elegans'. **'Montrose'** (syn. *A.* x *h.* 'Lady Gilmour' of gardens; *A.* x *h.* 'Margarete' of gardens)H 32in–4ft (80cm–1.2m), has large, double, soft reddish-pink flowers with rather twisted petals. **'Prince Henry'** see *A. hupehensis* var. *japonica* 'Prinz Heinrich'. **'Richard Ahrens'**, H 32–39in (80–100cm), bears large, single, soft pink flowers in midsummer. **'Robustissima'** (illus. p.222), H 3–5ft (1–1.5m), S 4–20in (10–50cm), has single, dark pink flowers borne on reddish stems. **'September Charm'** (syn. *A. hupehensis* 'September Charm'; illus. p.222), H 30in (75cm), S 20in (50cm), has single, clear pink flowers on wiry stems. **'Whirlwind'** (syn. *A.* x *h.* Wirbelwind; illus. p.222), H 32–39in (80–100cm), has irregularly formed double, white flowers, with some petals green flushed.
Wirbelwind see *A.* x *h.* 'Whirlwind'.
A.* x *intermedia. See *A.* x *lipsiensis*.
A. japonica of gardens. See *A.* x *hybrida*.
A.* x *lipsiensis, syn. *A.* x *intermedia*, *A.* x *seemannii*, illus. p.262. **'Pallida'** is a prostrate, carpeting perennial. H 2–6in (5–15cm), S to 18in (45cm). Produces single, pale cream flowers above deeply cut, mid-green foliage in spring. Z5–8.
A. narcissiflora illus. p.255.
A. nemorosa (Wood anemone). Vigorous, carpeting, rhizomatous perennial. H 3–6in (8–15cm), S 12in (30cm). Produces abundant, star-shaped, single, white flowers, with prominent, yellow stamens, in spring and early summer, above deeply cut, mid-green leaves. Likes woodland conditions. Z4–8. **'Allenii'** produces many large, cup-shaped, single, rich lavender-blue flowers in spring. **'Bowles' Purple'** is late-flowering, sometimes with purple-edged leaves and purple flowers. **'Lychette'** is early-flowering, with white flowers. **'Robinsoniana'** has lavender-blue flowers, pale creamy-gray beneath, on maroon stems. **'Vestal'** has anemone-centered, double, white flowers. **'Virescens'** is infertile and flowers are replaced by rosettes of leaflike green tepals. **'Wilks' Giant'** (syn. *A.n.* 'Wilk's Giant') has larger, single, white flowers.
A. pavonina illus. p.402.
A. ranunculoides illus. p.263. **'Pleniflora'** (syn. *A.r.* 'Flore Pleno') is a spreading, rhizomatous perennial. H 2–4in (5–10cm), S to 18in (45cm) or more. Bears buttercup-like, double, yellow flowers in spring. Leaves are divided. Likes damp, woodland conditions. Z4–8.
A. rivularis illus. p.437.
A.* x *seemannii. See *A.* x *lipsiensis*.
A. sylvestris (Snowdrop windflower) illus. p.255.
A. tomentosa, syn. *A. vitifolia* of gardens. Vigorous, clump-forming perennial with a creeping rootstock. H 3–5ft (1–1.5m), S 2ft (60cm). Large, 3–7 lobed mid-green leaves with toothed margins have white-hairy undersides. In summer, flower stems bear 5-petaled, slightly cupped, pale pink flowers, 2–2½in (5–6cm) across, with yellow stamens. Z5–9.
A. trullifolia illus. p.350.
A. tschaernjaewii illus. p.416.
A. vitifolia. Branching, clump-forming perennial. H 3ft (1m), S indefinite. Has vinelike leaves, woolly beneath, and open cup-shaped, occasionally pink-flushed, white flowers with yellow stamens in summer. Z5–8.
A. vitifolia of gardens. See *A. tomentosa*.

ANEMONELLA

RANUNCULACEAE

Genus of one species of tuberous perennial, grown for its flowers. Needs shade and humus-rich, moist soil. Propagate by seed when fresh or by division every 3–5 years in fall.
A. thalictroides illus. p.350. **'Oscar Schoaf'** (syn. *A.t.* 'Schoaf's Double') is a slow-growing, tuberous perennial. H 4in (10cm), S 12in (30cm). Has delicate, fernlike leaves. From spring to early summer bears small, cup-shaped, double, strawberry-pink flowers, singly on finely branched, slender stems. Z4–7.

ANEMONOPSIS

False anemone

RANUNCULACEAE

Genus of one species of clump-forming perennial, related to *Anemone*. Likes a sheltered, semishaded position and humus-rich, moist but well-drained soil. Propagate by division in spring or by seed sown in late summer, when fresh.
A. macrophylla (False anemone) illus. p.270.

ANEMOPAEGMA

BIGNONIACEAE

Genus of evergreen, tendril climbers, grown for their flowers. Needs partial shade in summer and humus-rich,well-drained soil. Water regularly and freely when in full growth, less at other times. Provide support, and in summer thin out stems at intervals; shorten all growths by half in spring. Propagate by softwood or semiripe cuttings in spring or summer.
A. chamberlaynei. Fast-growing, evergreen, tendril climber. H 12–20ft (4–6m). Leaves have 2 pointed, ovate leaflets and a 3-hooked tendril. Foxglovelike, primrose-yellow flowers are borne in upper leaf axils in summer. Z12–15. (min. 45°F/7°C)

ANGELICA
APIACEAE/UMBELLIFERAE

Genus of summer-flowering, herbaceous perennials and biennials, some of which have culinary and medicinal uses. Grows in sun or shade and in any well-drained soil. Remove seed heads when produced, otherwise plants may die. Propagate by seed when ripe.
A. archangelica (Angelica) illus. p.219.

ANGELONIA
PLANTAGINACEAE

Genus of small subshrubs and evergreen, soft-stemmed perennials, grown for summer display in containers and borders. Grow in moist but well-drained, fertile soil in sun. Propagate by seed or softwood cuttings or spring.
***A. angustifolia* AngelMist Series 'AngelMist Lavender Stripe'** illus. p.310.

ANGRAECUM
ORCHIDACEAE

See also ORCHIDS.
A. sesquipedale illus. p.468.

ANGULOA
ORCHIDACEAE

See also ORCHIDS.
A. clowesii (Cradle orchid). Deciduous, epiphytic orchid for a cool greenhouse. H and S 2ft (60cm). Fragrant, erect, cup-shaped, lemon-yellow flowers, 4in (10cm) long, each with a loosely hinged, yellow lip, are produced singly in early summer. Broadly ovate, ribbed leaves are 18in (45cm) long. Provide semishade in summer. Z13–15. (min. 52°F/11°C, max. 86°F/30°C)

ANIGOZANTHOS
Kangaroo paw
HAEMODORACEAE

Genus of evergreen, clump-forming perennials, with thick rootstocks and fans of sword-shaped leaves, grown for their curious flowers. Needs an open, sunny position and does best in well-drained, peaty or leafy, acidic soil. Propagate by division in spring or by seed when fresh, in late summer.
A. flavidus illus. p.476.
A. manglesii illus. p.470.
A. rufus. Tufted perennial. H to 3ft (1m), S 16–24in (40–60cm). Panicles of 2-lipped, rich burgundy flowers, covered with purple hairs, are borne in spring. Has long, sword-shaped, stiff, mid-green leaves. Z10–11. (min. 41°F/5°C)

ANISODONTEA
MALVACEAE

Genus of evergreen shrubs and woody-based perennials, grown for their flowers. Needs full light and well-drained soil. Water potted plants freely in full growth, very little at other times. Tip-prune young plants to promote a bushy habit. Propagate by seed in spring or greenwood or semiripe cuttings in late summer.
A. capensis, syn. *Malvastrum capensis*. Evergreen, erect shrub. H 24–36in (60–100cm), S 16–32in (40–80cm). Has hairy stems and hairy, triangular to ovate, mid-green leaves, 1in (25cm) long, with 3–5 shallow to deep lobes, which may themselves be lobed and toothed. From summer to fall, bears dark-veined, pale to deep red-purple flowers, 1in (25cm) across, singly or in racemes from the leaf axils. Z8–9
***A.* 'El Rayo'.** Evergreen, bushy shrub. H 5–6ft (1.5–2m), S 3–5ft (1–1.5m). Produces spreading, hairy stems and obovate to oblong, toothed, mid-green leaves, 2in (5cm) long, with 3 deep lobes. In summer (into winter in frost-free areas), bears 2- or 3-flowered racemes of dark pink flowers, 1⅜in (3.5cm) across, with dark magenta-pink bases, from the leaf axils. Z8–10

ANNONA
Cherimoya, Custard apple, Sweet sop
ANNONACEAE

Genus of deciduous or evergreen shrubs and trees, grown for their edible fruits and ornamental appearance. Needs full light or partial shade and fertile, moisture-retentive but well-drained soil. Water specimens in containers moderately when in full growth, sparingly in winter. Propagate by seed in spring or by semiripe cuttings in late summer. Red spider mite may be a nuisance.
A. reticulata (Bullock's heart, Custard apple). Mainly deciduous, rounded tree. H 20ft (6m) or more, S 10–15ft (3–5m). Has oblong to lance-shaped, 5–10in (13–25cm) long leaves. Cup-shaped, olive-green flowers, often flushed purple, are borne in summer, followed by edible, heart-shaped, red-flushed, greenish-brown fruits, each 5in (13cm) long. Z14–15 (min. 59°F/15°C)

Anoiganthus breviflorus. See *Cyrtanthus breviflorus*.
Anoiganthus luteus. See *Cyrtanthus breviflorus*.
Anomatheca laxa. See *Freesia laxa*.

ANOPTERUS
ESCALLONIACEAE

Genus of evergreen shrubs grown for their foliage and flowers. Needs shade or semishade and moist but well-drained, lime-free soil. Propagate by semiripe cuttings in summer.
A. glandulosus illus. p.110.

ANREDERA
Madeira vine, Mignonette vine
BASELLACEAE

Genus of evergreen, tuberous, twining climbers, grown for their luxuriant foliage and small, scented flowers.
If grown in cool areas will die down in winter. Requires a position in full light and well-drained soil. Water moderately in growing season, but sparingly at other times. Provide support. Cut back the previous season's growth by half or to just above ground level in spring. Propagate by tubers, produced at stem bases, in spring or by softwood cuttings in summer.
A. cordifolia, syn. *Boussingaultia baselloides* of gardens, illus. p.197.

ANTENNARIA
Cat's ears
ASTERACEAE/COMPOSITAE

Genus of evergreen or semievergreen perennials, grown for their nearly stemless "everlasting" flower heads and mats of often woolly leaves. Good for groundcover. Needs sun and well-drained soil. Propagate by seed or division in spring.
A. dioica. Semievergreen, mat-forming, dense perennial. H 2in (5cm), S to 18in (45cm). Leaves are tiny, ovate, usually woolly and greenish-white. Short stems carry fluffy, white or pale pink flower heads in late spring and early summer. Good when grown in a rock garden. Z5–9. Compact **'Nyewoods'** has very deep rose-pink flowers. **var. *rosea*** see *A. rosea*.
A. rosea, syn. *A. dioica* var. *rosea*, illus. p.351.

ANTHEMIS
Dog's fennel
ASTERACEAE/COMPOSITAE

Genus of mat- or clump-forming, sometimes hummock-forming annuals and perennials, some evergreen, grown for their daisylike flower heads and fernlike foliage. Prefers a position in sun and well-drained soil.
May need staking for support. Cut to ground level after flowering to produce good leaf rosettes in winter. Propagate by division in spring or, for some species, by basal cuttings in late summer, fall, or spring.
A. nobilis. See *Chamaemelum nobile*.
A. punctata* subsp. *cupaniana illus. p.264.
A. sancti-johannis. Evergreen, bushy, spreading perennial. H 2–3ft (60–90cm), S 2ft (60cm). In summer bears many daisy-like, bright orange flower heads among fernlike, shaggy, mid-green leaves. Z3–8
A. tinctoria. Evergreen, clump-forming perennial. H and S 3ft (90cm). Produces a mass of daisylike, yellow flower heads in midsummer, borne singly above a basal clump of fernlike, crinkled, mid-green leaves. Propagate by basal cuttings in spring or late summer.
Z3–8. **'E.C. Buxton'** illus. p.243.

ANTHERICUM
Spider plant
ASPARAGACEAE

Genus of upright perennials with saucer- or trumpet-shaped flowers rising in spikelike racemes from clumps of leaves. Likes a sunny site and fertile, well-drained soil that does not dry out in summer. Ideal for a border, for naturalizing in grass, and for cutting. Propagate by division in spring or by seed in fall.
A. graminifolium. See *A. ramosum*.
A. liliago (St Bernard's lily) illus. p.263.
A. ramosum, syn. *A. graminifolium*. Upright rhizomatous perennial. H 3ft (90cm), S 1–2ft (30–60cm). Produces linear, gray-green leaves, to 16in (40cm) long. In early and mid-summer, bears branched, open panicles of star-shaped, lilylike white flowers, to ⅝in (1.5cm) across, with petals ½–¾in (1–2cm) long. Z5–8

Antholyza paniculata. See *Crocosmia paniculata*.

ANTHURIUM
ARACEAE

Genus of evergreen, erect, climbing or trailing perennials, some grown for their foliage and others for their bright flower spathes. Prefers bright light in winter and indirect sun in summer; needs a fairly moist atmosphere and moist, but not waterlogged, peaty soil. Propagate by division in spring. ☠ All parts may cause mild stomach disorder if digested; contact with sap may irritate skin.
A. andraeanum (Flamingo flower) illus. p.470.
A. crystallinum (Crystal anthurium) illus. p.465.
A. scherzerianum (Flamingo flower). Evergreen, erect, tufted perennial. H 20–24in (50–60cm), S 12in (30cm). Has oblong, leathery, dark green leaves, to 8in (20cm) long. Produces large, long-lasting, bright red spathes and fleshy, orange to yellow spadices. Z11. (min. 61°F/16°C).
'Rothschildianum', H and S 12in (30cm), bears white-spotted, red spathes and yellow spadices.
A. veitchii (Queen anthurium). Evergreen, erect, short-stemmed perennial. H 3–4ft (1–1.2m), S 2–3ft (60–90cm). Glossy, corrugated leaves, to 3ft (1m) long, are ovate, with heart-shaped bases on 2–3ft (60cm–1m) long leaf stalks. Intermittently has a long-lasting, leathery, green to white spathe that surrounds a cream spadix. Z11. (min. 61°F/16°C)

ANTHYLLIS
PAPILIONACEAE/LEGUMINOSAE

Genus of annuals, perennials and shrubs grown for their flowers and finely divided leaves. Needs sun and well-drained soil. Propagate by softwood cuttings in summer or by seed in fall.
A. hermanniae. Rounded, bushy shrub. H to 18in (45cm), S 2ft (60cm) or more. Spiny, tangled stems bear simple or 3-parted, bright green leaves. Has small, pealike, yellow flowers in summer. Good for a rock garden. Z6–8
A. montana illus. p.338. **'Rubra'** is a rounded or spreading, woody-based perennial. H to 1ft (30cm), S to 2ft (60cm). Divided leaves consist of 17–41 narrowly ovate leaflets. Heads of cloverlike, bright pink flowers are borne in late spring and early summer. Good for a rock garden. Z6–8

ANTIGONON
Coral vine
POLYGONACEAE

Genus of evergreen, woody-stemmed, tendril climbers, grown for their foliage and profuse clusters of small flowers. Grow in full light and fertile, well-drained soil. Water freely in growing season, sparingly at other times. Needs tropical conditions to flower well. Provide support. Thin out congested growth in early spring. Propagate by seed in spring or by softwood cuttings in summer.

A. leptopus. Fast-growing, evergreen, woody-stemmed, tendril climber. H 20ft (6m). Has crinkly, pale green leaves. Dense trusses of bright pink, sometimes red or white, flowers grow mainly in summer, but all year in tropical conditions. Z15 (min. 59°F/15°C)

ANTIRRHINUM

Snapdragon

PLANTAGINACEAE/SCROPHULARIACEAE

Genus of perennials and semievergreen subshrubs, usually grown as annuals, flowering from spring to fall. Needs sun and rich, well-drained soil. Deadhead to prolong flowering season. Propagate by seed sown outdoors in late spring or by stem cuttings in early fall or spring. Rust disease may be a problem with *A. majus*, but rust-resistant cultivars are available.
A. asarina. See *Asarina procumbens*.
A. majus. Erect, short-lived perennial, usually grown as a bedding annual, which branches from the base. Cultivars are grown as annuals and are grouped according to size and flower type: tall, H 2–3ft (60cm–1m), S 12–18in (30–45cm); intermediate, H and S 18in (45cm); dwarf, H 8–12in (20–30cm), S 12in (30cm); regular tubular-shaped (hyacinth-like) flowers; penstemon, trumpet-shaped flowers; double; and irregular tubular-shaped flowers. All have lance-shaped leaves and, from spring to fall, carry spikes of usually 2-lipped, sometimes double, flowers in a variety of colors, including white, pink, red, purple, yellow and orange. Z9–11. **Antiquity Mixed** (intermediate, penstemon) is branching, producing scented, bicolored flowers in white and shades of pink, purple and dark red. **Appeal Series** (dwarf, regular) is compact, with flowers in a wide range of colors, including some bicolors. **'Black Prince'** illus. p.306. **Liberty Classic Series** cultivars (intermediate, regular) are free-flowering and rust-resistant; strong stems carry flowers in colors that include white, yellow, orange, red and pink. **'Bronze'** flowers open pink and fade to orange. **'Liberty Yellow'** illus. p.320. **'Liberty Scarlet'** illus. p.310. **Madame Butterfly Series** cultivars (tall, double) are vigorous, with azalea-like double flowers in a wide range of colors; good for cut flowers. **'Night and Day'** (intermediate, regular) has dark crimson-and-white flowers. **Rocket Series** (tall, regular) are vigorous, with flowers in a broad color range; excellent for cut flowers. **Sonnet Series** (intermediate, regular) are bushy, with flowers in a variety of colors. **Twinny Series** (dwarf, semidouble to double) produces large flowers that are densely packed on the stems; colors include white, yellow, pink, red and violet. **'Twinny Appleblossom'** has pale pink flowers that age to creamy white. **'Twinny Peach'** has orange-pink flowers.

APHELANDRA

ACANTHACEAE

Genus of evergreen shrubs and subshrubs with attractive, showy flowers. Grows best in bright light but out of direct sun in summer. Use soft water and keep soil moist but not waterlogged. Benefits from feeding when flower spikes are forming. Propagate by seed or tip cuttings from young stems in spring.
A. squarrosa (Zebra plant).**'Dania'** is an evergreen, compact perennial. H and S 12in (30cm). Ovate, glossy, dark green leaves, with white veins and midribs, are nearly 1ft (30cm) long. Dense, 4-sided spikes, to 6in (15cm) long, of 2-lipped, bright yellow flowers form in axils of yellow bracts in fall. **'Louisae'** illus. p.476. Z14–15 (min. 45–50°F/7–10°F, optimum 66°F/19°C)

APHYLLANTHES

ASPARAGACEAE

Genus of one species of summer-flowering perennial. Grow in a sunny, warm, sheltered corner, preferably in an alpine house, and in well-drained, sandy, peaty soil. Resents disturbance. Propagate by seed in fall or spring.
A. monspeliensis. Tuft-forming perennial. H 4–10in (10–25cm), sometimes to 16in (40cm), S 4–6in (10–15cm). Star-shaped, pale to deep blue flowers are borne singly or in small groups at tops of wiry, glaucous green stems from early to midsummer. Leaves are reduced to red-brown sheaths surrounding stems. Z9–10

APONOGETON

APONOGETONACEAE

Genus of deciduous, perennial, deep-water plants, grown for their floating foliage and often heavily scented flowers. Requires an open, sunny position. Tidy fading foliage in fall. Propagate by division in spring or by seed while still fresh.
A. distachyos (Cape pondweed, Water hawthorn) illus. p.435.

Aporocactus flagelliformis. See *Disocactus flagelliformis*

APTENIA

AIZOACEAE

Genus of fast-growing, perennial succulents, with trailing, freely branching stems, that form good groundcover. Needs full sun and well-drained soil. Keep dry in winter. Propagate by seed or stem cuttings in spring or summer.
A. cordifolia, syn. *Mesembryanthemum cordifolium*, illus. p.484. **'Variegata'** is a fast-growing, prostrate, perennial succulent. H 2in (5cm), S indefinite. Has ovate, glossy, bright green leaves, with creamy-white margins, and small, daisylike, bright pink flowers in summer. Z12–15

AQUILEGIA

Columbine

RANUNCULACEAE

Genus of graceful, clump-forming, often short-lived perennials, grown for their mainly bell-shaped, spurred flowers in spring and summer. Suitable for rock gardens. Prefers an open, sunny site and well-drained soil. Propagate species by seed in fall or spring. Selected forms only occasionally come true from seed (e.g. *A. vulgaris* 'Nora Barlow') as they cross freely; segregate them widely. Prone to aphid attack. ⓘ Contact with sap may irritate skin.
A. akitensis. See *A. flabellata* var. *pumila*.
A. alpina (Alpine columbine) illus. p.334.
A. atrata (Black columbine). Clump-forming perennial H 24–28in (60–70 cm), S 12in (30cm). Bell-shaped, fluted, deep purple-violet flowers with spreading sepals and short ½in (1cm)-long, strongly hooked spurs are borne in early summer above mid-green, glaucous-backed leaves divided into 9 segments. Z4–8
A. bertolonii, syn. *A. reuteri*. Clump-forming, compact perennial. H to 12in (30cm), S 4in (10cm). Bell-shaped, blue-violet flowers with spreading sepals and short, ½in- (1cm-) long curved spurs are borne in late spring and early summer over dark green leaves divided into 9 segments. Z4–7
A. Biedermeier Group. Short-stemmed, compact perennials. H 20in (50cm), S 12in (30cm). Almost upward-facing, open-bell-shaped flowers in colors varying from purple-blue to lilac, red, pink or white are borne from late spring to midsummer above divided, bluish-green foliage. Z4–7
A. 'Bluebird' (Songbird Series; illus. p.226). Clump-forming, compact perennial. H 24–28in (60–70cm), S 14–16in (35–40 cm). Bears large, open bell-shaped, fluted flowers with white petals, soft, pale violet-blue sepals and long, slightly curved spurs in late spring and early summer above fernlike, divided, mid-green leaves. Z4–9
A. 'Bunting' (Songbird Series; illus. p.226). Clump-forming, compact perennial. H 2ft (60cm), S 12–14in (30–35cm). Open bell-shaped, fluted flowers with white, blue-flushed petals, violet-blue sepals and long spurs are produced in late spring and early summer above fernlike, divided, mid-green leaves. Z4–9
A. canadensis (Canadian columbine; illus. p.226). Clump-forming, leafy perennial. H 24–36in (60–90cm), S 12in (30cm). In early summer, bears semipendent, bell-shaped flowers, with yellow sepals and red spurs, several per slender stem, above fernlike, dark green foliage. Z3–8
A. 'Cardinal' (Songbird Series). Clump-forming, compact perennial. H 20in (50cm), S 12–14in (30–35cm). Open bell-shaped, fluted flowers with white petals, deep red-pink at the base, dark red sepals and long, curved spurs are borne in late spring and early summer above fernlike, divided, mid-green leaves. Z4–8
A. chrysantha (Yellow columbine; illus. p.226). Vigorous, clump-forming perennial. H 3ft (90cm), S 2ft (60cm). In early summer, produces semipendent, bell-shaped, pale to bright yellow flowers, with long spurs, several per stem. Has fernlike, divided, mid-green leaves. Z3–8. **'Yellow Queen'** has golden-yellow flowers.
A. coerulea (Rocky mountain columbine) illus. p.226. Upright perennial. H 2ft (60cm), S 12in (30cm). Almost upward-facing flowers, with open-spreading white sepals, pale to deep sky-blue petals and long spurs are borne from late spring to midsummer above mid-green, divided leaves. Z4–7
A. 'Dove' (Songbird Series; illus. p.226). Clump-forming, compact perennial. H 30in (75cm), S 14–16in (35–40cm). Open bell-shaped, fluted, large flowers with white petals, sepals and long spurs, are borne in late spring and early summer above fernlike, divided, light green leaves. Z4–9
A. 'Dragonfly' (illus. p.226). Upright perennial. H 2ft (60cm), S 12in (30cm). Bell-shaped, upright to semihorizontally-placed, fluted, large flowers with yellow, basally red-flushed petals and purplish-red sepals and spurs are produced from late spring to midsummer above fernlike, mid-green, divided leaves. Z4–7
A. flabellata. Clump-forming perennial. H 4–12in (10–30cm), S 4–6in (10–15cm). Bell-shaped, soft blue flowers, each with fluted petals and a short spur, are produced in summer. Rounded, finely divided leaves form an open, basal rosette. Needs semishade and moist soil. Z4–9.
var. *alba* 'White Jewel' has white flowers. **'Nana Alba'** see *A.f.* var. *pumila* f. *alba*. **var. *pumila*** (syn. *A. akitensis*; illus. p.226) grows to 6in (15cm) and has deep blue and white petals. **var. *pumila* f. *alba*** (syn. *A.f.* 'Nana Alba'), H to 4in (10cm), is compact and has white flowers.
A. 'Florida' (State Series). Clump-forming, upright perennial. H 30in (75cm), S 12in (30cm). Bears open, bell-shaped, fluted flowers with long spurs, mid-yellow petals and creamy-yellow, spreading sepals, in late spring and early summer, above fernlike, divided, light green leaves. Z4–8
A. fragrans. Upright perennial. H 6–16in (15–40cm), S 6–8in (15–20cm). Nodding, bell-shaped, fragrant flowers with creamy-white petals and bluish- or pinkish-white sepals and spurs to ¾in (2cm) long are produced in midsummer above finely divided bluish-green leaves. Z4–8
A. 'Goldfinch' (Songbird Series). Clump-forming, compact perennial. H 24–28in (60–70cm), S 14in (35cm). Has open bell-shaped, fluted flowers with bright yellow petals, sepals and long spurs in late spring and early summer above fernlike, divided, mid-green leaves. Z4–8
A. 'Hensol Harebell' (illus. p.226). Clump-forming, compact perennial. H 30in (75cm), S 12in (30cm). In late spring, tall, slender stems bear pendent, bell-shaped, short-spurred, soft blue flowers above fernlike, divided, pale green leaves. Z4–7
A. jonesii illus. p.368.
A. karelinii. Clump-forming perennial. H 8–32in (20–80cm), S 5–12in (12–30cm) . Nodding, bell-shaped flowers with violet to wine-purple petals, spreading sepals and short, hooked spurs are produced above the light green, slightly glaucous leaves in early summer. Z3–9
A. longissima (illus. p.226). Clump-forming, leafy perennial. H 24–36in (60–90cm), S 45cm (18cm). Bell-shaped, pale yellow flowers, with very long, bright yellow spurs, are borne, several per stem, in early summer, above fernlike, divided, mid-green leaves. Z4–9
A. 'Louisiana'. Upright perennial. H to 2ft (60cm) or more, S 14in (35cm). Large, upward-facing flowers, with long, red spurs, red sepals and white petals, are borne on branching stems from late spring to midsummer. Has fernlike, divided, mid-green leaves. Z5–9
A. 'Mrs. Scott Elliott'. See *A.* Mrs. Scott Elliott Hybrids.

***A.* Mrs. Scott Elliott Hybrids**, syn. *A.* 'Mrs. Scott Elliott'. Clump-forming, leafy perennials. H 3ft (90cm), S 2ft (60cm). Bell-shaped, long-spurred flowers of various colors, often bicolored, are borne on wiry stems. Divided, fernlike leaves are bluish-green. Z4–7

***A.* 'Origami Yellow'.** Upright, compact perennial. H to 14in (35cm), S 8–12in (20–30cm). In late spring to midsummer, bears large, upward-facing, butter-yellow flowers with long spurs and spreading sepals. Has divided, fernlike, light green leaves. Z6–10

A. reuteri. See *A. bertolonii.*

***A.* 'Robin' (Songbird Series).** Clump-forming, compact perennial. H 2ft (60cm), S 12in (30cm). Open bell-shaped, fluted flowers with white petals, pink-flushed at the base, dusky pink, spreading sepals and long spurs are produced in late spring and early summer above fernlike, divided, pale mid-green leaves. Z4–8

A. rockii. Upright perennial. H 20–32in (50–80cm), S 12–14in (30–35cm). In late spring and early summer, bears nodding to semierect, narrowly bell-shaped, deep purple flowers with spreading sepals and curved spurs, to ¾in (2cm) long, above mid-green, divided leaves, glaucous beneath. Z6–8

A. scopulorum. Clump-forming perennial. H 3–6in (8–15cm), S to 4in (10cm). In summer, bears bell-shaped, fluted, pale blue, or rarely pink, flowers, each with a cream center and very long spurs. Leaves have 9 ovate, glaucous leaflets. Z4–8

***A.* 'Sunburst Ruby'.** Clump-forming perennial. H 2ft (60cm), S 12in (30cm). In late spring and early summer, bears semi-double to double, deep ruby-red, semi-upright flowers above golden, fernlike, divided leaves. Z4–8

A. triternata (illus. p.226). Upright perennial. H 8–24in (20–60cm), S 8–12in (20–30cm). Narrowly bell-shaped, nodding flowers with short, yellow, sometimes red-flushed petals, red sepals and 1in (25cm) long spurs are produced in early summer above the 3-parted, mid-green leaves. Z3–9

A. viridiflora (illus. p.226). Upright, short-lived perennial. H 8–12in (20–30cm), S 6–8in (15–20cm). In late spring and early summer, bears fragrant, nodding, bell-shaped flowers with purple, chocolate-brown or sometimes yellow-green petals with contrasting green sepals and ¾in (2cm) long spurs above the 3-parted, mid-green leaves. Often available as *A.* 'Chocolate Soldier'. Z4–8

A. vulgaris (Granny's bonnets). Clump-forming, leafy perennial. H 3ft (90cm), S 18in (45cm). Many funnel-shaped, short-spurred flowers, in shades of pink, crimson, purple and white, are borne, several per long stem, in early summer. Gray-green leaves are rounded and divided into leaflets. Z3–8. **var. *alba*** has white flowers. **'Magpie'** see *A.v.* 'William Guiness'. **'Munstead White'** see *A.v.* 'Nivea'. **'Nivea'** (syn. *A.v.* 'Munstead White'; illus. p.226) has gray-green leaves and white flowers. **var. *stellata* 'Black Barlow'** (illus. p.223) bears spurless, deep purple-black, double flowers. **var. *stellata* 'Nora Barlow'** (illus. p.226) produces double red flowers, pale green at the tips. **var. *stellata* 'Ruby Port'** (illus. p.226) bears spurless, deep ruby-red double flowers. **'William Guiness'** (syn. *A.v.* 'Magpie'; illus. p.226) has nodding, deep blue-purple flowers with the tips of the petals white.

***A.* 'Winky Red-White'** (Winky Series). Clump-forming, compact perennial. H 14–20in (35–50cm), S 12in (30cm). Double or semidouble flowers, with a mix of red and white petals, are borne in late spring and early summer above divided, fernlike, pale to mid-green leaves. Z4–8

***A.* 'Yellow Star'.** Upright perennial. H 2ft (60cm), S 12in (30cm). Pendent yellow flowers with creamy yellow spurs, to 2in (5cm) long, are borne from late spring to midsummer. Has mid-green leaves divided into leaflets. Z3–8

ARABIS

BRASSICACEAE/CRUCIFERAE

Genus of annuals and mainly evergreen perennials. Excellent groundcover for a rock garden. Needs sun and well-drained soil. Propagate by softwood cuttings in summer or by seed in fall.

A. albida. See *A. alpina* subsp. *caucasica.*

A. alpina* subsp. *caucasica, syn. *A. albida, A. caucasica.* Evergreen, mat-forming perennial. H 6in (15cm), S 20in (50cm). Bears loose rosettes of obovate, toothed, mid-green leaves and, in late spring and summer, fragrant, 4-petaled, white, occasionally pink, flowers. Good on a dry bank. Trim back after flowering. Z4–8. **'Douler Angevine'** illus. p.352. **'Flore Pleno'** (syn. *A. caucasica* 'Plena') bears double, white flowers. **'Schneehaube'** is robust and cushion-forming. **'Variegata'** (syn. *A. caucasica* 'Variegata') illus. p.347.

A. blepharophylla. Short-lived, evergreen, mat-forming perennial. H to 5in (12cm), S 8in (20cm). Has loose rosettes of ovate, toothed, dark green leaves, with hairy, gray margins. Fragrant, 4-petaled, bright pink to white flowers are borne in spring. Z5–8. **'Frühlingszauber'** (syn. *A.b.* Spring Charm) illus. p.353.

A. caucasica. See *A. alpina* subsp. *caucasica.* **'Plena'** see *A. alpina* subsp. *caucasica* 'Flore Pleno'. **'Variegata'** see *A. alpina* subsp. *caucasica* 'Variegata'.

***A. ferdinandi-coburgi* 'Variegata'.** See *A. procurrens* 'Variegata'.

***A. procurrens* 'Variegata'**, syn. *A. ferdinandi-coburgi* 'Variegata', illus. p.375.

ARALIA

ARALIACEAE

Genus of deciduous and evergreen trees, shrubs and perennials, grown for their bold leaves and small, but profuse flowers. Requires sun or semishade, some shelter and fertile, well-drained soil. Propagate those below by seed in fall or by suckers or root cuttings in late winter.

A. cordata (Japanese spikenard, Udo). Upright, architectural perennial. H and S 6–10ft (2–3m). Leaves are divided into ovate, finely toothed leaflets. In summer, bears small, white flowers in panicle-like umbels, to 3ft (1m) long, then spherical black fruits. Z3–9. **'Sun King'** has bright golden yellow young leaves in spring.

A. elata (Japanese angelica tree). Deciduous tree or suckering shrub with sparse, sturdy, prickly stems. H and S 30ft (10m). Has large, dark green leaves with numerous ovate, paired leaflets. Billowing heads of tiny, white flowers, forming a large panicle, 1–2ft (30–60cm) long, are borne in late summer and fall. Z4–9.

'Albomarginata' see *A.e.* 'Variegata'.

'Aureovariegata' has leaflets broadly edged with yellow. **'Variegata'** (syn. *A.e.* 'Albomarginata') illus. p.93.

A. japonica. See *Fatsia japonica.*

A. sieboldii. See *Fatsia japonica.*

ARAUCARIA

ARAUCARIACEAE

See also CONIFERS.

A. araucana (Chile pine, Monkey puzzle) illus. p.98.

ARAUJIA

APOCYNACEAE/ASCLEPIADACEAE

Genus of evergreen, twining climbers with woody stems that exude milky juice when cut. Requires sun and fertile, well-drained soil. Propagate by seed in spring or by stem cuttings in late summer or early fall.

A. sericifera (Cruel plant) illus. p.195.

ARBUTUS

ERICACEAE

Genus of evergreen trees and shrubs, grown for their leaves, clusters of small, urn-shaped flowers, ornamental bark and strawberrylike fruits, which are edible but insipid. Frost hardy, but must be protected from strong, cold winds when young. Prefers a position in full sun and needs fertile, well-drained soil; *A. menziesii* requires acidic soil. May be propagated by semiripe cuttings in late summer or by seed sown in fall.

A. andrachne (Grecian strawberry tree). Evergreen, spreading tree or shrub. H and S 20ft (6m). Has ovate, glossy, dark green leaves and peeling, reddish-brown bark. Panicles of urn-shaped, white flowers in late spring, are followed by orange-red fruits. Prefers a sheltered position. Z7–9.

A.* x *andrachnoides illus. p.79.

A. menziesii (Madroña, Madroñe). Evergreen, spreading tree. H and S 50ft (15m). Has smooth, peeling, reddish bark and ovate, dark green leaves. Large, upright, terminal panicles of urn-shaped, white flowers, produced in early summer, are followed by orange or red fruits. Z7–9

A. unedo (Strawberry tree) illus. p.93. **'Atlantic'** is an evergreen, spreading, sometimes shrubby tree. H and S 26ft (8m). Has rough, shredding brown bark and ovate, glossy, deep green leaves. Pendent panicles of small white flowers are borne in fall. Spherical, warty red fruit ripen the following fall; flowers and fruits freely, even on young plants. Z8–9

ARCHONTOPHOENIX

King palm

ARECACEAE/PALMAE

Genus of single-stemmed palms, grown for their majestic appearance. Needs full light or partial shade and humus-rich, well-drained soil. Water container specimens moderately, less when temperatures are low. Propagate by seed in spring at not less than 24°C (75°F). Red spider mite may be troublesome.

A. alexandrae (Alexandra palm, Northern bungalow palm) illus. p.452.

A. cunninghamiana (Illawarra palm, Piccabeen palm). Evergreen palm. H 50–70ft (15–20m), S 6–15ft (2–5m). Has long, arching, feather-shaped leaves. Mature trees have large clusters of small, lavender or lilac flowers in summer, followed by large, egg-shaped, red fruits. Z10–11 (min. 50–55°F/10–13°C)

ARCTOSTAPHYLOS

Manzanita

ERICACEAE

Genus of mostly evergreen trees and shrubs, grown for their foliage, flowers and fruits. Some are also grown for their bark, others for groundcover. Provide shelter from strong winds. Does best in full sun and well-drained, acidic soil. Propagate by semiripe cuttings in summer or by seed in fall.

***A.* 'Emerald Carpet'** illus. p.147.

A. patula illus. p.144.

A. uva-ursi illus. p.376. **'Point Reyes'** illus. p.375. **'Vancouver Jade'** is an evergreen, trailing, sometimes arching shrub. H 6in (15cm), S 18in (45cm). Has small, ovate, glossy, bright green leaves and bears small, urn-shaped, pink flowers in summer. Z2–6

ARCTOTHECA

ASTERACEAE/COMPOSITAE

Genus of creeping perennials, grown for their daisylike flower heads. Will survive short periods to 23°F (–5°C); usually grown as annuals in cold-winter regions. Requires a site in bright light and fertile, well-drained soil; dislikes humid conditions. Propagate by seed or division in spring.

A. calendula, syn. *Cryptostemma calendulaceum* (Cape dandelion), illus. p.476.

ARCTOTIS

SYN. x VENIDIOARCTOTIS

ASTERACEAE/COMPOSITAE

Genus of annuals and perennials, grown for their flower heads and foliage. Requires full sun and leafy loam with sharp sand added. Propagate by seed in fall or spring or by stem cuttings year-round.

***A.* Harlequin Hybrids**, syn. *A.* x *hybrida.* Fairly slow-growing, upright, branching perennials, usually grown as annuals. H 18–20in (45–50cm), S 12in (30cm). Lance-shaped, lobed leaves are grayish-green above, white below. In summer has large, daisylike flower heads in many shades, including yellow, orange, bronze, purple, pink, cream and red. Z13–15. **'Bacchus'** has purple flower heads; **'China Rose'** deep pink; **'Flame'** brilliant orange-red; **'Sunshine'** yellow; **'Tangerine'** orange-yellow; and **'Torch'** bronze.

A.* x *hybrida. See *A.* Harlequin Hybrids.

A. stoechadifolia. See *A. venusta.*

A. venusta, syn. *A. stoechadifolia* (African daisy). Compact perennial, often grown as an annual. H 2ft (60cm),

S 16in (40cm). During summer and into fall, bears daisylike, creamy-white flower heads with blue centers. Chrysanthemum-like leaves are dark green above, gray beneath. Z13–15

ARDISIA

PRIMULACEAE/MYRSINACEAE

Genus of evergreen shrubs and trees, grown for their foliage, flowers and fruits. Needs partial shade and humus-rich, well-drained but not dry soil. Water potted plants freely when in full growth, moderately at other times. Cut back old plants in early spring if required. Propagate by seed in spring or by semiripe cuttings in summer.

A. crenata, syn. *A. crenulata* (Coralberry, Spiceberry), illus. p.456.

A. crenulata. See *A. crenata*.

Areca lutescens of gardens. See *Dypsis lutescens*.

Arecastrum romanozoffianum. See *Syagrus romanozoffiana*.

Aregelia carolinae. See *Neoregelia carolinae*.

ARENARIA

Sandwort

CARYOPHYLLACEAE

Genus of spring- and summer-flowering annuals and mainly low-growing perennials, some of which are evergreen. Most need sun and well-drained, sandy soil. Propagate by division or softwood cuttings in early summer or by seed in fall or spring.

A. balearica illus. p.347.

A. montana illus. p.360.

A. purpurascens illus. p.351.

A. tetraquetra illus. p.348.

ARGEMONE

PAPAVERACEAE

Genus of vigorous annuals, perennials and one shrub. Grow in sun and in very well-drained soil. Deadhead to prolong the flowering season. Propagate by seed sown outdoors in late spring.

A. mexicana (Devil's fig, Prickly poppy) illus. p.321.

ARGYRANTHEMUM

ASTERACEAE/COMPOSITAE

Genus of evergreen subshrubs, grown for their daisylike flowers. Needs full sun and moderately fertile, well-drained soil. Propagate by semiripe cuttings in summer or root greenwood cuttings in spring.

***A.* 'Cornish Gold'** illus. p.319.

A. frutescens, syn. *Chrysanthemum frutescens* (Marguerite), illus. p.298.

***A.* 'Jamaica Primrose'**, syn. *Chrysanthemum frutescens* 'Jamaica Primrose', illus. p.319.

***A.* 'Mary Wootton'**, syn. *Chrysanthemum frutescens* 'Mary Wootton'. Evergreen, open subshrub. H and S to 3ft (1m). Has fernlike, divided, grayish-green foliage. In summer, produces daisylike, light pink flower heads, 2in (5cm) across, which fade almost to white. Z10–11

***A.* 'Summer Melody'** illus. p.300.

ARGYREIA

CONVOLVULACEAE

Genus of evergreen, twining climbers, closely allied to *Ipomoea*, grown for their showy flowers. Needs full light and fertile, well-drained soil. Water freely in full growth, sparingly at other times. Support is needed. Thin out previous season's growth in spring. Propagate by seed in spring or by softwood or greenwood cuttings in summer. Red spider mite and whitefly may be troublesome.

A. nervosa, syn. *A. speciosa* (Woolly morning glory). Evergreen, twining climber. H 25–30ft (8–10m). Ovate, silver-backed leaves are 7–11in (18–27cm) long. In summer–fall, clusters of downy white buds open into funnel-shaped, lavender-blue flowers with darker bases. Z13–15 (min. 55°F/13°C)

A. speciosa. See *A. nervosa*.

ARGYROCYTISUS

FABIACEAE

Genus of one species of deciduous, erect, multi-stemmed shrub. Due to its rather lax stems, it is best grown against a wall, in well-drained soil and in full sun. Relatively drought tolerant and does not require feeding. Propagate by seed in early spring.

A. battandieri, syn. *Cytisus battandieri* (Moroccan broom, Pineapple broom). Vigorous, upright, treelike deciduous shrub, spreading with age. H and S 16ft (5m). Has palmate, silvery-gray leaves. Dense, upright racemes of pineapple-scented, yellow flowers are borne in mid- to late summer. Tolerates an open but not exposed position. Z7–9

ARGYRODERMA

AIZOACEAE

Genus of dwarf perennial succulents, grown for their very fleshy, gray-green leaves united in a prostrate, egg shape. In summer, daisylike flowers are borne in the central split between the leaves. Needs full sun and extremely well-drained soil. Propagate by seed in summer.

A. aureum. See *A. delaetii*.

A. blandum. See *A. delaetii*.

A. brevipes. See *A. fissum*.

A. delaetii, syn. *A. aureum*, *A. blandum*, illus. p.488.

A. fissum, syn. *A. brevipes*, illus. p.491.

A. pearsonii, syn. *A. schlechteri*, illus. p.491.

A. schlechteri. See *A. pearsonii*.

ARIOCARPUS

Living rock

CACTACEAE

Genus of very slow-growing, perennial cacti with large, swollen roots. Flattened, spherical, green stems have angular tubercles and tufts of wool. Prefers full sun and extremely well-drained, lime-rich soil. Very prone to rotting. Propagate by seed in spring or summer.

A. fissuratus. Very slow-growing, flattened spherical, perennial cactus. H 4in (10cm), S to 6in (15cm). Gray stem is covered with rough, triangular tubercles each producing a tuft of wool. In fall, bears pink-red flowers, 1½in (4cm) across. Z12–15 (min. 50°F/10°C)

ARISAEMA

ARACEAE

Genus of rhizomatous or tuberous perennials, grown for their large, curious, hooded spathes, each enclosing a pencil-shaped spadix. Forms spikes of fleshy, red fruits in fall, before dying down. Needs sun or partial shade and moist but well-drained humus-rich soil. Plant tubers 6in (15cm) deep in spring. Propagate by seed in fall or spring or by offsets in spring.

A. atrorubens. See *A. triphyllum*.

A. candidissimum illus. p.422.

A. consanguineum illus. p.393.

A. griffithii illus. p.412.

A. jacquemontii illus. p.412.

A. ringens. Early spring-flowering, tuberous perennial. H 12in (30cm), S 4in (10cm). Bears 2 erect leaves, each with 3 long-pointed lobes, and a widely hooded, green spathe, enclosing the spadix, that has paler green stripes and is edged with dark brown-purple. Z6–9

A. sikokianum illus. p.408.

A. tortuosum. Summer-flowering, tuberous perennial. H to 5ft (1.5m), S 8in (20cm). Each dark green-mottled, pale green stem bears 2–3 erect leaves, divided into several ovate leaflets. A hooded, green or purple spathe, with a protruding, S-shaped spadix, overtops leaves. Produces spikes of attractive, fleshy, red fruits in fall. Z8–9

A. triphyllum, syn. *A. atrorubens* (Jack-in-the-pulpit), illus. p.406.

ARISARUM

ARACEAE

Genus of rhizomatous or tuberous perennials, grown mainly for their curious, hooded spathes enclosing spadices with minute flowers. Needs partial shade and humus-rich, well-drained soil. Propagate in fall by dividing established clumps of tubers, which produce offsets freely.

A. proboscideum (Mouse plant). Clump-forming, spring-flowering, tuberous perennial. H 6in (15cm), S 10in (25cm). Leaves are arrow-shaped and prostrate. Produces a spadix of minute flowers concealed in a hooded, dark brown spathe that is drawn out into a tail up to 6in (15cm) long, creating a mouselike effect. Z7–9

ARISTEA

IRIDACEAE

Genus of evergreen, clump-forming, rhizomatous perennials, grown for their spikes of blue flowers in spring or summer. Prefers a sunny position and well-drained soil. Established plants cannot be moved satisfactorily. Propagate by seed in fall or spring.

A. capitata, syn. *A. major*, illus. p.393.

A. ecklonii. Evergreen, robust, clump-forming rhizomatous perennial. H 3ft (1m), S 18in (45cm). Has tufts of linear basal leaves, 12–18in (30–45cm) long, and smaller, linear stem-clasping leaves. In summer, bears loose, spikelike panicles of saucer-shaped blue flowers, ¾in (2cm) across. Z9–10

A. major. See *A. capitata*.

ARISTOLOCHIA

Birthwort, Dutchman's pipe

ARISTOLOCHIACEAE

Genus of evergreen or deciduous climbers, occasionally shrubs or scandent perennials, grown for their foliage and flowers. Needs partial shade in summer and well-drained soil. Water regularly, less when not in full growth. Provide support. Cut back previous season's growth to 2 or 3 nodes in spring. Propagate by seed in spring or semiripe cuttings in summer. Red spider mite and whitefly may be a problem.

A. durior. See *A. macrophylla*.

A. elegans. See *A. littoralis*.

A. gigas. See *A. grandiflora*.

A. grandiflora, syn. *A. gigas* (Pelican flower, Swan flower). Vigorous, evergreen, woody-stemmed, twining climber. H 22ft (7m) or more. Leaves are broadly ovate, 6–10in (15–25cm) long. In summer, bears large, unpleasant-smelling, tubular, purple-veined, white flowers, each with a long tail and expanding at the mouth into a heart-shaped lip. Z13–15

A. griffithii, syn. *Isotrema griffithii*. Moderately vigorous, evergreen, woody-stemmed, twining climber. H 15–20ft (5–6m). Deciduous in cold winters. Has heart-shaped leaves and tubular, dark red flowers, each with an expanded, spreading lip, in summer. Z10–11 (min. 50°F/10°C)

A. littoralis, syn. *A. elegans* (Calico flower), illus. p.462.

A. macrophylla, syn. *A. durior*, *A. sipho* (Dutchman's pipe), illus. p.204.

A. sipho. See *A. macrophylla*.

ARISTOTELIA

ELAEOCARPACEAE

Genus of deciduous and evergreen shrubs and trees, grown for their foliage. Grow both male and female plants to obtain fruits. Where marginally hardy, protect by growing against other shrubs or a sunny wall. Needs sun or semishade and fertile, well-drained soil. Propagate by semiripe cuttings in summer.

A. chilensis, syn. *A. macqui*. Evergreen, spreading shrub. H and S 15ft (5m). Leaves are ovate, glossy and deep green. Tiny, star-shaped, green flowers are borne in summer, followed by small, spherical, black fruits. Z9–11. **'Variegata'** has leaves conspicuously margined with yellow.

A. macqui. See *A. chilensis*.

ARMERIA

PLUMBAGINACEAE

Genus of evergreen perennials and, occasionally, subshrubs, grown for their tuftlike clumps or rosettes of leaves and their flower heads. Needs a position in sun and well-drained soil. Propagate by semi-ripe cuttings in summer or by seed in fall.

***A.* 'Bees' Ruby'**, syn. *A. pseudarmeria* 'Bees Ruby'. Evergreen, clump-forming, dwarf subshrub. H 12in (30cm), S 10in

(25cm). Round heads of many small, ruby-red flowers are produced in summer on stiff stems above narrow, grasslike, dark green leaves. Z4–7
A. caespitosa. See *A. juniperifolia.*
A. juniperifolia, syn. *A. caespitosa*, illus. p.352. **'Bevan's Variety'** is an evergreen, densely cushioned subshrub. H and S to 2in (5cm). Narrow, pointed, mid- to gray-green leaves form loose rosettes. In late spring and early summer, bears round heads of small, deep pink flowers. Z4–8
A. latifolia. See *A. pseudarmeria.*
A. maritima (Sea pink, Thrift). Evergreen, clump-forming perennial or dwarf subshrub. H to 8in (20cm), S to 12in (30cm). Leaves are narrow, grasslike and dark green. Stiff stems bear round heads of many small, white to pink flowers in summer. A good edging plant. Z4–8. **'Vindictive'** illus. p.365.
A. pseudarmeria, syn. *A. latifolia*, illus. p.336. **'Bees Ruby'** see *A.* 'Bees Ruby'.

ARNEBIA

BORAGINACEAE

Genus of annuals and perennials with hairy leaves, suitable for rock gardens and banks. Needs sun and gritty, well-drained soil. Propagate by seed in fall, by root cuttings in winter or by division in spring.
A. echioides. See *A. pulchra.*
A. pulchra, syn. *A. echioides*, *Echioides longiflorum*, *Macrotomia echioides* (Prophet flower). Clump-forming perennial. H and S to 12in (30cm). Leaves are lance-shaped to narrowly ovate, hairy and light green. In summer produces loose racemes of tubular, bright yellow flowers, each with 5 spreading lobes and fading dark spots at petal bases. Z6–8

ARNICA

ASTERACEAE/COMPOSITAE

Genus of rhizomatous perennials, grown for their large, daisylike flower heads. Suitable for large rock gardens. Prefers sun and humus-rich, well-drained soil. Propagate by division or seed in spring. ⓘ All parts may cause severe discomfort if ingested, and contact with sap may aggravate skin allergies.
A. montana. Tufted, rhizomatous perennial. H to 20in (50cm), S 12in (30cm). Bears narrowly ovate, hairy, gray-green leaves and, in summer, solitary daisylike, golden flower heads, 2in (5cm) across. Prefers acidic soil. Z5–8

ARONIA

Chokeberry

ROSACEAE

Genus of deciduous shrubs, cultivated for their flowers, fruits and colorful fall foliage. Needs sun (for fall color at its best) or semishade and fertile, well-drained soil. May be propagated by softwood or semiripe cuttings taken in summer; by seed sown in fall; or by division from early fall to spring.
A. arbutifolia (Red chokeberry; illus. p.142). Deciduous shrub, upright when young, later arching. H 10ft (3m), S 5ft (1.5m). Clusters of small, white flowers, with red anthers, in late spring, are followed by red berries. Dark green leaves turn red in fall. Z5–9. **'Erecta'** has a neat columnar habit when young, broadening with age, and reliable orange-red fall color.
A. melanocarpa (Black chokeberry) illus. p.128.
A. x prunifolia. Deciduous, upright shrub. H 10ft (3m), S 8ft (2.5m). Ovate, glossy, dark green leaves redden in fall. Bears star-shaped, white flowers in late spring and early summer, followed by spherical, purplish-black fruits. Z5–9

ARRHENATHERUM

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES and SEDGES.
A. elatius (False oat grass). **subsp. *bulbosum* 'Variegatum'** is a loosely tuft-forming, herbaceous, perennial grass. H and S to 12in (30cm). Has a basal stem swelling, hairless, gray-green leaves, with white margins, and open panicles of brownish spikelets in summer. Z5–8

ARTEMISIA

Wormwood

ASTERACEAE/COMPOSITAE

Genus of annuals, perennials and shrubs, some evergreen, grown for their fernlike, silvery, sometimes aromatic, foliage. Prefers an open, sunny, well-drained site; dwarf types benefit from a protective winter covering of sharp grit or gravel. Trim lightly in spring. Propagate by division in spring or fall or by softwood or semiripe cuttings in summer.
A. abrotanum (Lad's love, Old man, Southernwood) illus. p.165.
***A. absinthium* 'Lambrook Silver'.** Evergreen, bushy perennial, woody at base. H and S to 30in (75cm). Has a mass of finely divided, aromatic, silvery-gray leaves. Produces tiny, insignificant, gray flower heads, in long panicles, in summer. Needs protection in an exposed site. Z4–8
***A. alba* 'Canescens'**, syn. *A. canescens*, *A. splendens.* Semievergreen, bushy perennial. H 18in (45cm), S 12in (30cm). Has delicate, finely cut, curling, silvery-gray leaves. In summer, bears insignificant, yellow flower heads on erect, silver stems. Good groundcover. Z4–8
A. arborescens (Wormwood) illus. p.165. **'Brass Band'** see *A.* 'Powis Castle'. **'Faith Raven'** is an evergreen, upright shrub. H 4ft (1.2m), S 3ft (1m). Has finely cut, aromatic, silvery-white foliage and bears rounded heads of small, bright yellow flowers in summer and early fall. Z5–9
A. assoana. See *A. caucasica.*
A. canescens. See *A. alba* 'Canescens'.
A. caucasica, syn. *A. assoana*, *A. lanata*, *A. pedemontana.* Evergreen or semievergreen, prostrate perennial. H and S 12in (30cm). Fernlike foliage is densely covered with silvery-white hairs. Small clusters of small, rounded, yellow flower heads are borne in summer. Suits a rock garden or wall. Z5–9
A. frigida. Semievergreen, mat-forming perennial with a woody base. H 12in (30cm) in flower, S 12in (30cm) or more. Bears small, fernlike, aromatic, silky, gray-white leaves, divided into many linear lobes. In summer produces narrow panicles of small, rounded, yellow flower heads. Z3–8
A. lactiflora (White mugwort) illus. p.216.
A. lanata. See *A. caucasica.*
A. ludoviciana. Semievergreen, rhizomatous, clump-forming perennial. H 4ft (1.2m), S 2ft (60cm). Has aromatic, lance-shaped, woolly, silvery-gray leaves with jagged margins. Bears slender plumes of tiny, grayish-white flower heads in summer. Z4–9. **'Silver Queen'**, H 30in (75cm), has densely white-woolly panicles of brownish-yellow flower heads from midsummer to fall. **'Valerie Finnis'** illus. p.274.
A. pedemontana. See *A. caucasica.*
A. pontica (Roman wormwood). Vigorous, upright perennial. H 16–32in (40–80cm), S indefinite. Has aromatic, feathery, silver-green foliage and tall spikes of small, grayish flower heads in summer. May spread. Z4–8
***A.* 'Powis Castle'**, syn. *A. arborescens* 'Brass Band', illus. p.242.
A. schmidtiana. Semievergreen, hummock-forming perennial with creeping stems. H 12in (30cm), S to 18in (45cm). Has fernlike, very finely and deeply cut, silver leaves and, in summer, produces short racemes of small, rounded, pale yellow flower heads. Good for a large rock garden, wall or bank. Needs sandy, peaty soil. Z5–8. **'Nana'** illus. p.374.
A. splendens. See *A. alba* 'Canescens'.
A. stelleriana. Evergreen, rounded, rhizomatous perennial with a woody base. H 1–2ft (30–60cm), S 2–3ft (60cm–1m). White-haired, silver leaves are deeply lobed or toothed. Bears slender sprays of small, yellow flower heads in summer. Needs light soil. Z3–7. **'Boughton Silver'** (syn. *A.s.* 'Mori', *A.s.* 'Silver Brocade'), H to 6in (15cm), S 12–18in (30–40cm), is vigorous and arching in habit. **'Mori'** see *A.s.* 'Boughton Silver'. **'Silver Brocade'** see *A.s.* 'Boughton Silver'.

ARTHROPODIUM

ASPARAGACEAE

Genus of tufted perennials, grown for their flowers. Prefers a site against a sunny, sheltered wall in fertile soil. Propagate by division in spring or by seed in spring or fall.
A. cirratum, syn. *A. cirrhatum* (Rienga lily, Rock lily). Branching perennial. H 3ft (1m), S 1ft (30cm). Bears sprays of nodding, shallowly cup-shaped, white flowers on wiry stems in early summer. Has a basal tuft of narrowly sword-shaped leaves and fleshy roots. Z8–9
A. cirrhatum. See *A. cirratum.*

ARUM

Cuckoo pint, Lords and ladies

ARACEAE

Genus of tuberous perennials, grown for their leaves and spathes, each enclosing a pencil-shaped spadix of tiny flowers. Needs sun or partial shade and moist but well-drained soil. Propagate by seed in fall or division in early fall.
***A.* 'Chameleon'.** Late-spring-flowering tuberous perennial. H 16in (40cm), S 12in (30cm). Has arrow-shaped leaves, 10in (25cm) long, with irregular, silver and white markings over various shades of green. Bears pale green spathes followed by spikes of bright red berries. Z7–10
A. creticum illus. p.407.
A. dioscoridis. Spring-flowering, tuberous perennial. H 8–12in (20–30cm), S 6in (15cm). Has a sail-like, green or purple spathe, blotched dark purple, surrounding a blackish-purple spadix. Arrow-shaped, semierect leaves emerge in fall. Needs a sheltered, sunny site. Z7–9
A. dracunculus. See *Dracunculus vulgaris.*
A. italicum. Early summer-flowering, tuberous perennial. H 12in (30cm), S 6in (15cm). Has arrow- to spear-shaped, mid-green, white-veined leaves, lasting from winter to late spring. Pale greenish white spathes are followed by spikes of bright orange-red berries, which may last until new leaves develop. Z7–9. **'Pictum'** see *A.i.* subsp. *italicum* 'Marmoratum'. **subsp. *italicum* 'Marmoratum'** (syn. *A.i.* 'Pictum') illus. p.421. **subsp. *italicum* 'White Winter'**, H 6–8in (15–20cm), is dwarf, with leaves that are heavily marbled with white.
A. pictum. Fall-flowering, tuberous perennial. H 6–10in (15–25cm), S 6in (15cm). Arrow-shaped, semierect, glossy leaves, with cream veins, emerge at same time as cowl-like, deep purple-brown spathe and dark purple spadix. Z6–9

ARUNCUS

ROSACEAE

Genus of perennials, grown for their hummocks of broad, fernlike leaves and their plumes of white flowers borne in summer. Thrives in full light and any well-drained soil. Propagate by seed in fall or by division in spring or fall.
A. dioicus, syn. *A. sylvester* (Goat's beard), illus. p.436. **'Kneiffii'** illus. p.231.
A. sylvester. See *A. dioicus.*

Arundinaria anceps. See *Yushania anceps.*
Arundinaria auricoma. See *Pleioblastus viridistriatus.*
Arundinaria falconeri. See *Himalayacalamus falconeri.*
Arundinaria fastuosa. See *Semiarundinaria fastuosa.*
Arundinaria fortunei. See *Pleioblastus variegatus.*
Arundinaria japonica. See *Pseudosasa japonica.*
Arundinaria jaunsarensis. See *Yushania anceps.*
Arundinaria murieliae. See *Fargesia murieliae.*
Arundinaria nitida. See *Fargesia nitida.*
Arundinaria variegata. See *Pleioblastus variegatus.*

ARUNDO

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES and SEDGES.
A. donax (Giant reed). Herbaceous, rhizomatous, perennial grass. H 15ft (5m),

S 5ft (1.5m) or more. Has thick stems that bear broad, floppy, blue-green leaves. Produces dense, erect panicles of whitish-yellow spikelets in summer. Can be grown in moist soil. Z6–9. **var. *versicolor*** (syn. *A.d.* 'Variegata') illus. p.436. **'Variegata'** see *A.d.* var. *versicolor*.

ASARINA

PLANTAGINACEAE

Genus of one species of trailing, evergreen perennial, grown for its flowers. Hardy to 14°F (–10°C), but herbaceous in cold regions. Grow in a site with full light in any well-drained soil. Propagate by seed in spring.

***A. barclayana*.** See *Maurandya barclayana*.

***A. erubescens*.** See *Lophospermum erubescens*.

A. procumbens, syn. *Antirrhinum asarina*, illus. p.371.

ASARUM

SYN. HEXASTYLIS

Wild ginger

ARISTOLOCHIACEAE

Genus of rhizomatous perennials, mainly evergreen, with pitcher-shaped flowers under kidney- or heart-shaped leaves. Good for groundcover, although leaves may become damaged in severe weather. Prefers shade and humus-rich, moist but well-drained soil. Propagate by division in spring. Self seeds readily.

***A. caudatum*.** Evergreen, prostrate, rhizomatous perennial. H 6in (15cm), S 12in (30cm) or more. Heart-shaped, leathery, glossy, dark green leaves, 2–4in (5–10cm) across, conceal small, pitcher-shaped, reddish-brown or brownish-purple flowers, with tail-like lobes, in early summer. Z7–9

A. europaeum (Asarabacca) illus. p.375.

A. hartwegii, syn. *A. marmoratum*. Evergreen, prostrate, rhizomatous perennial. H 3in (8cm), S to 12in (30cm) or more. Pitcher-shaped, very dark brown, almost black, flowers, with tail-like lobes, are produced in early summer beneath heart-shaped, silver-marked, mid-green leaves, 2–4in (5–10cm) across. Z2–8

***A. marmoratum*.** See *A. hartwegii*.

***A. splendens*.** Evergreen, prostrate, rhizomatous perennial. H 4in (10cm), S 8in (20cm) or more. Bears solitary, broadly heart-shaped to nearly arrow-shaped, often white-blotched, dull-green leaves, to 4in (10cm) long. In spring, produces bell-shaped, dark purple-green flowers, to 1¼in (3cm) long, with broad, ovate lobes, to ¾in (2cm) long. Z5–9

ASCLEPIAS

Silk weed

APOCYNACEAE/ASCLEPIADACEAE

Genus of tuberous perennials and a few subshrubs or shrubs, some of which are evergreen, grown for their flowers. Stems exude milky, white latex when cut. Where marginally hardy, prefers a position in sun and a humus-rich, well-drained soil. Propagate by division or seed in spring. Frost tender species require sun and a moist atmosphere; cut back during periods of growth. Water very sparingly in low temperatures. Propagate by tip cuttings or seed in spring. ⓘ Contact with the milky sap may irritate skin.

A. curassavica (Bloodflower). Evergreen, bushy, tuberous subshrub. H 3ft (1m), S 2ft (60cm). Has narrowly ovate leaves to 6in (15cm) long. Umbels of small, but showy, 5-horned, orange-red flowers with yellow centers are borne in summer–fall and are followed by narrowly ovoid, pointed fruits, 3in (8cm) long, with silky seeds. Z9–11 (min. 45°F/7°C)

***A. hallii*.** Upright, tuberous perennial. H to 3ft (1m), S 2ft (60cm). Has oblong leaves, to 5in (13cm) long. Umbels of small, 5-horned, dark pink flowers are borne in summer; tightly packed silky seeds are enclosed in narrowly ovoid fruits, to 6in (15cm) long. Z9–11

***A. physocarpa*.** See *Gomphocarpus physocarpus*.

***A. syriaca*.** (Common milkweed) Upright, tuberous perennial. H to 6ft (2m), S indefinite. Has ovate leaves to 8in (20cm) long. Bears umbels of small, 5-horned, purplish-pink flowers on drooping flower stalks in summer, followed by narrowly ovoid fruits, to 6in (15cm) long and filled with silky seeds. Z3–9

A. tuberosa (Butterflyweed) illus. p.246.

ASIMINA

ANNONACEAE

Genus of deciduous or evergreen shrubs and small trees, grown for their foliage and flowers. Needs full sun and fertile, deep, moist but well-drained soil. Propagate by seed in fall or by layering or root cuttings in winter.

A. triloba (Pawpaw). Deciduous, open shrub. H and S 20ft (6m). Large, ovate, mid-green leaves emerge in late spring or early summer, just after, or at the same time as, 6-petaled, purplish-brown flowers. Later it produces small, globular, brownish, edible fruits. Z6–8

ASPARAGUS

ASPARAGACEAE/LILIACEAE

Genus of perennials, climbers and subshrubs, some of which are evergreen, grown for their foliage. Grow in partial shade or bright light, but not direct sun, in any fertile, well-drained soil. Propagate by seed or division in spring.

A. densiflorus illus. p.474. **'Myersii'** (syn. *A. meyeri*, *A.* 'Myers'; Foxtail fern) illus. p.474.

***A. meyeri*.** See *A. densiflorus* 'Myersii'.

***A.* 'Myers'.** See *A. densiflorus* 'Myersii'.

A. scandens illus. p.463.

ASPERULA

RUBIACEAE

Genus of annuals, perennials and dwarf shrubs; some species are good as alpine houseplants. Most species need sun and well-drained soil with moisture at roots. Dislikes winter wet on crown. Propagate by softwood cuttings or seed in early summer.

A. athoa of gardens. See *A. suberosa*.

***A. odorata*.** See *Galium odoratum*.

A. suberosa, syn. *A. athoa* of gardens, illus. p.362.

ASPHODELINE

ASPHODELACEAE/LILIACEAE

Genus of perennials with thick, fleshy roots, grown for their star-shaped flowers. Requires sun and not over-rich soil. Propagate by division in early spring, taking care not to damage roots, or by seed in fall or spring.

***A. liburnica*.** Clump-forming perennial. H 3ft (1m), S 12in (30cm). Has needlelike, blue-green leaves, to 10in (25cm) long, borne only on the lower part of the flower stems. Produces slender racemes, 6–9in (15–22cm) long, of pale yellow flowers in summer, 2in (5cm) across, with narrowly ovate to lance-shaped bracts, ⅝in (1.5cm) long, the petal backs striped green. Z6–9

A. lutea (Yellow asphodel) illus. p.227.

ASPHODELUS

ASPHODELACEAE/LILIACEAE

Genus of spring- or summer-flowering annuals and perennials. Requires sun; most prefer fertile, well-drained soil. *A. albus* prefers light, well-drained soil. Propagate by division in spring or by seed in fall.

***A. acaulis*.** Evergreen, stemless rhizomatous perennial. H to 6in (15cm), S 8in (20cm). Has rosettes of flat, linear, light green leaves, to 8in (20cm) long. In late winter and early spring, produces racemes of open funnel-shaped, pale pink or white, green-veined flowers, to 1½in (4cm) across, with white bracts. Z9–10

A. albus (White asphodel) illus. p.230.

A. fistulosus, syn. *A. tenuifolius*. Annual or short-lived perennial. H 18in (45cm), S 8in (20cm). Has a dense, basal clump of narrow, cylindrical, keeled, mid-green leaves, to 14in (35cm) long. In mid- and late summer, hollow, often branched stems bear panicles of star-shaped, pinkish white flowers, to 1in (25cm) across, with brown central veins, amid white bracts. Z6–10

***A. tenuifolius*.** See *A. fistulosus*.

ASPIDISTRA

ASPARAGACEAE

Genus of evergreen, rhizomatous perennials, grown mainly for their glossy foliage. Very tolerant, but is best grown in a cool, shady position away from direct sunlight and in well-drained soil. Water frequently when in full growth, less at other times. Propagate by division of rhizomes in spring.

***A. attenuata*.** Evergreen, rhizomatous perennial. H 36in (1m), S 20in (50cm) or more. Has long-stalked, pointed, elliptic, yellow-spotted, glossy, deep green leaves, 18–20in (45–50cm) long. Small, urn-shaped red and yellow flowers are produced at ground level in spring or fall. Z10–13

***A. daibuensis*.** Evergreen, rhizomatous perennial. H 36in (1m), S 20in (50cm) or more. Produces lance-shaped, yellow-spotted, glossy, deep green leaves, 16–24in (40–60cm) long. Cup-shaped, yellow flowers are borne near ground level, in summer–fall. Z10–13

A. elatior (Cast-iron plant). Evergreen, rhizomatous perennial. H and S to 2ft (60cm). Has upright, narrow, pointed-ovate leaves, to 2ft (60cm) long; inconspicuous, cream to purple flowers are occasionally produced on short stalks near soil level. Z7–11. **'Asahi'** has variegated leaves, each with a narrow, inverted wedge-shaped, white zone extending down the leaf from the apex. **'Variegata'** illus. p.277.

***A. zongbayi* 'Uan Fat Lady'.** Evergreen, rhizomatous perennial. H and S 12in (30cm). Slender leaf stalks bear broadly ovate, wavy-margined, bright green leaves, 8in (20cm) long, speckled with greenish-yellow and with a central, broad, pale stripe. Cup-shaped, purple flowers are produced near ground level from late summer to fall. Z11–14

ASPLENIUM

ASPLENIACEAE

Genus of evergreen or semievergreen ferns. Plants described prefer partial shade, but *A. trichomanes* tolerates full sun. Grow in any moist soil; containerized plants should be grown in potting mix that includes chopped sphagnum moss or peat substitute. Regularly remove any fronds that are fading. Propagate by spores or bulbils, if produced, in late summer.

A. bulbiferum (Hen-and-chicken fern, Mother spleenwort). Tufted, semievergreen or evergreen fern. H to 28in (70cm), S 2ft (60cm). Lance-shaped, finely divided, dark green fronds produce bulbils from which young plants develop. Z9–11

A. bulbiferum of gardens**.** See *A.* x *lucrosum*.

A. ceterach, syn. *Ceterach officinarum* (Rusty-back fern), illus. p.293.

A.* x *lucrosum, syn. *A. bulbiferum* of gardens, illus. p. 478.

A. nidus (Bird's-nest fern) illus. p.479.

A. scolopendrium, syn. *Phyllitis scolopendrium*, *Scolopendrium vulgare*, (Hart's-tongue fern), illus. p.292.

Crispum Group illus. p.292. **Cristatum Group** cultivars are terrestrial evergreen ferns. H 2ft (60cm), S 32in (80cm). Produce irregular, shuttlecock-like crowns of strap-shaped, leathery, glossy, bright green fronds, to 16in (40cm) long, heart-shaped at the bases, often with wavy margins, and crested at the tips; fronds are fertile. Z5–9

A. trichomanes (Maiden-hair spleenwort) illus. p.291.

ASTELIA

ASTELIACEAE

Genus of clump-forming evergreen perennials, grown mainly for their attractive, arching foliage. Prefers full sun or semishade and fertile soil that does not dry out readily. Propagate by division in spring.

A. chathamica illus. p.242.

***A. nervosa*.** Clump-forming perennial. H 2ft (60cm), S to 6ft (2m). Produces long, sword-shaped, arching leaves, usually 2ft (60cm) long, green and silver-woolly above, bronze to white and scaly beneath, with green midribs. In summer, bears graceful, branching panicles of small, star-shaped, pale brown flowers. Z8–9

ASTER

Michaelmas daisy

ASTERACEAE/COMPOSITAE

Genus of annuals, biennials, perennials and subshrubs, grown for their daisylike flower heads. Prefers sun or partial shade and fertile, well-drained soil, with adequate moisture all summer. Tall asters require staking. Propagate by softwood cuttings in spring or by division in spring or fall.

A. acris. See *Galatella sedifolia.*

A. albescens, syn. *Microglossa albescens.* Deciduous, upright, slender-stemmed subshrub. H 4ft (1.2m), S 6ft (2m). Has narrowly lance-shaped, gray-green leaves and produces flattish sprays of lavender-blue flower heads, with yellow centers, in midsummer. Z7–10

A. alpinus illus. p.367. **'Dark Beauty'** see *A.a.* 'Dunkle Schöne'. **'Dunkle Schöne'** (syn. *A.a.* 'Dark Beauty') is a clump-forming perennial. H 10in (25cm), S 18in (45cm). Leaves are lance-shaped and dark green. Deep purple flower heads are borne from mid- to late summer. Suitable for a rock garden. Z4–8

A. amelloides. See *Felicia amelloides.*

***A. amellus* 'King George'** illus. p.250. **'Mauve Beauty'** is a bushy perennial. H and S 20in (50cm). In fall, bears clusters of large, terminal, daisylike, violet flower heads with yellow centers. Leaves are lance-shaped, coarse and mid-green. **'Nocturne'**, H 30in (75cm), has deep lilac flower heads with yellow centers. **'Rudolph Goethe'** has large, violet-blue flower heads. **'Sonia'** has pink flower heads. **'Veilchenkönigin'** (syn. *A.a.* 'Violet Queen'; illus. p.249) has deep violet flower heads. **'Violet Queen'** see *A.a.* 'Veilchenkönigin'. Z5–8

A. capensis. See *Felicia amelloides.*

A. coelestis. See *Felicia amelloides.*

***A.* 'Coombe Fishacre'.** See *Symphyotrichum* 'Coombe Fishacre'.

***A. cordifolius* 'Silver Spray'.** See *Symphyotrichum cordifolium* 'Silver Spray'.

A. diffusus. See *Symphyotrichum lateriflorum.*

A. divaricatus. See *Eurybia divaricata.*

A. ericoides. See *Symphyotrichum ericoides.*

***A.* x *frikartii* 'Mönch'.** Bushy perennial. H 28in (70cm), S 18in (45cm). Daisylike, single, soft lavender-blue flower heads with yellowish-green centers are borne continuously from midsummer to late fall. Leaves are ovate and rough. May need staking. Z5–8. **'Wunder von Stäfa'** (illus. p.249) is similar but has lavender flowers.

***A.* 'Kylie'.** See *Symphyotrichum* 'Kylie'.

A. laevis. See *Symphyotrichum laeve.*

A. lateriflorus. See *Symphyotrichum lateriflorum.*

A. linosyris. See *Galatella linosyris.*

***A.* 'Little Carlow'.** See *Symphyotrichum* 'Little Carlow'.

***A. novae-angliae* 'Andenken an Alma Pötschke'.** See *Symphyotrichum novae-angliae* 'Andenken an Alma Pötschke'. **'Autumn Snow'** see *S.n-a.* 'Herbstschnee'.

***A. novi-belgii* 'Apple Blossom'.** See *Symphyotrichum novi-belgii* 'Apple Blossom'.

***A.* 'Photograph'.** See *Symphyotrichum* 'Photograph'.

***A. pilosus* var. *demotus*.** See *Symphyotrichum pilosum* var. *pringlei.*

***A. sedifolius*.** See *Galatella sedifolia.*

***A.* 'Sunhelene'.** See *Symphyotrichum* 'Sunhelene'.

A. thomsonii. Upright perennial. H 24–30in (60–70cm), S 20in (50cm). Produces long-petaled, pale lilac flower heads, freely in fall. Leaves are slightly heart-shaped. Z4–8. **'Nanus'** is more compact, H 18in (45cm), S 10in (25cm).

A. tongolensis. Mat-forming perennial. H 18in (45cm), S 12in (30cm). Large, lavender-blue flower heads, with orange centers, are borne singly in early summer. Has lance-shaped, hairy, dark green leaves. Z4–8

A. tradescantii of gardens. See *Symphyotrichum pilosum* var. *pringlei.*

A. turbinellus. See *Symphyotrichum turbinellum.*

ASTERANTHERA

GESNERIACEAE

Genus of one species of evergreen, climbing or creeping shrub. May be grown up mossy tree trunks, trained against walls or used as groundcover. Needs a dampish, semishaded position and neutral to slightly acidic soil. Propagate by tip cuttings in summer or by stem cuttings in late summer or early fall.

A. ovata. Evergreen, root climber with stems covered in white hairs. H to 12ft (4m). Has small, oblong, toothed leaves. Tubular, reddish-pink flowers, 2–2½in (5–6cm) long, often with yellow-striped, lower lips, are borne singly or in pairs in leaf axils in summer. Z8–9

ASTILBE

SAXIFRAGACEAE

Genus of summer-flowering, rhizomatous perennials, grown for their panicles of flowers that remain handsome even when dried brown in winter. Suitable for borders and rock gardens. Most need partial shade, and a rich, moist soil. Leave undisturbed if possible, and give a spring mulch of well-rotted compost. Propagate species by seed sown in fall, others by division in spring or fall.

***A.* 'Amethyst'** (x *arendsii* hybrid; illus. p.232). Clump-forming perennial. H and S to 3ft (1m). Tiny, star-shaped, vivid purple flowers are borne in long, rather open, slightly arching panicles in midsummer above sharply divided, matte, dark green leaves. Good at the back of a border. Z4–8

***A.* 'Beauty of Ernst'** (x *arendsii* hybrid). Clump-forming perennial. H 10–12in (25–30cm), S 18in (45cm). Compact, ovate, sharply divided, vivid green leaves become increasingly tinted wine-red and purple, then develop fiery fall colors. Tiny, star-shaped, pale pink flowers, maturing to apricot, are borne in open sprays in early summer. Z4–8

***A.* 'Brautschleier'**, syn. *A.* Bridal Veil (x *arendsii* hybrid). Clump-forming perennial. H and S 30in (75cm). Plumes of tiny, star-shaped, white flowers open in midsummer from bright green buds then fade to cream. Leaves are ovate, sharply divided, glossy and bright green. Less vigorous than many taller cultivars. Z3–8

***A.* 'Bressingham Beauty'.** Leafy, clump-forming perennial. H 3ft (90cm), S 2ft (60cm). In summer bears feathery, tapering panicles of small, star-shaped, rich pink flowers on strong stems. Broad leaves are divided into oblong to ovate, toothed leaflets. Z3–8

***A.* Bridal Veil.** See *A.* 'Brautschleier'.

***A.* 'Bronce Elegans'** (*simplicifolia* hybrid). Compact, clump-forming perennial. H 12in (30cm), S 10in (25cm). Pyramidal, slightly drooping panicles of tiny, star-shaped, purplish-pink flowers are borne in late summer on reddish stems. Ovate, sharply divided, dark green leaves slowly turn to reddish-purple. Z4–8

***A.* 'Bumalda'** (x *arendsii* hybrid). Clump-forming perennial. H and S 30in (75cm). Tiny, star-shaped, bright white flowers are borne in open panicles in midsummer. Has more or less ovate, jaggedly toothed, red-tinted, bronze leaves. Z4–8

A. chinensis* var. *pumila. Clump-forming perennial. H to 10in (25cm), S to 8in (20cm). Lower two-thirds of flower stem bears deeply dissected, coarse, toothed, hairy, dark green leaves. Dense, fluffy spikes of tiny, star-shaped, deep raspberry-red flowers are produced in summer. Good for a shaded, moist rock garden. Z4–8. **var. *taquetii* 'Purpurlanze'** (syn. *A.* 'Purple Lance', *A.* 'Purpurlanze') is tall and vigorous. H 4ft (1.2m), S 3ft (90cm). Has panicles of purple-red flowers over mid-green foliage in late summer and early fall. Tolerates drier conditions than most cultivars. **var. *taquetii* 'Superba',** H and S 4½ft (1.3m), is vigorous, with narrow, upright spikes of vivid magenta-purple flowers. **'Vision in Red'**, H 28in (70cm), S 26in (65cm), is vigorous and upright. Has very dark, slightly metallic green leaves and strong, dark purple stems and leaf stalks bearing purple flowers.

***A.* x *crispa* 'Perkeo'**, syn. *A.* 'Perkeo', illus. p. 339.

***A.* 'Deutschland'** (*japonica* hybrid; illus. p.232). Robust, slow-spreading, clump-forming, early flowering perennial. H 20in (50cm), S 12in (30cm). Has ovate, sharply divided, bright green leaves. Slightly arching panicles of tiny, star-shaped, white flowers are borne in late spring. Z4–9

***A.* 'Düsseldorf'** (*japonica* hybrid). Tightly clump-forming perennial. H 2ft (60cm), S 18in (45cm). Bears neat, regular panicles of tiny, star-shaped, salmon-pink flowers in midsummer above ovate, sharply divided, slightly bronze- or deep-red tinted, dark green leaves. Z4–8

***A.* 'Eliblo'.** See *A.* Elizabeth Bloom.

***A.* Elizabeth Bloom ('Eliblo')** (x *arendsii* hybrid). Vigorous, clump-forming perennial. H 32in (80cm), S 2ft (60cm). Ovate, densely packed panicles of tiny, star-shaped, pale purplish-pink flowers are borne in midsummer. Has ovate, sharply divided, glossy, dark green leaves. Z4–8

***A.* 'Europa'** (*japonica* hybrid; illus. p.232). Early-flowering, clump-forming perennial. H 2ft (60cm), S 18in (45cm). In early summer bears tiny, star-shaped, unusually broad-petaled, pale purplish-pink flowers in dense panicles. Has ovate, sharply divided, glossy, mid-green leaves. Z3–8

***A.* 'Fanal'** illus. p.439.

***A.* 'Feuer'**, syn. *A.* Fire (x *arendsii* hybrid; illus. p.232). Clump-forming perennial. H and S 3ft (1m). Conical plumes of tiny, star-shaped, rich purplish-red flowers are borne in early summer above ovate, sharply divided, glossy, bright green leaves. Z3–8

***A.* Fire.** See *A.* 'Feuer'.

A. glaberrima* var. *saxatilis. Mound-forming perennial. H to 3in (8cm), S 6in (15cm). In summer, produces tiny, star-shaped, white-tipped, mauve flowers in short spikes. Ovate, sharply divided, glossy, deeply toothed, dark green leaves are tinted red underneath. Thrives in consistently moist soil. Z3–8

***A.* 'Granat'** (illus. p.232). Clump-forming, leafy perennial. H 2ft (60cm), S 18in (45cm). Produces pyramidal trusses of tiny, star-shaped, deep red flowers in summer above broad, bronze-flushed, rich green leaves, which are divided into oblong to ovate, toothed leaflets. Z4–8

***A.* 'Irrlicht'** (illus. p.232). Leafy perennial. H and S 20in (50cm). Bears tapering, feathery plumes of tiny, white flowers in summer. Foliage is dark green and flowers remain on the plant, dried and brown, well into winter. Z4–9

***A.* 'Köln'** (*japonica* hybrid). Clump-forming perennial. H 2ft (60cm), S 18in (45cm). Panicles of tiny, star-shaped, deep pink flowers are borne in midsummer. Ovate, sharply divided, dark green leaves are tinted bronze or deep red. Z4–8

***A.* 'Montgomery'** (illus. p.232). Leafy perennial. H to 28in (70cm), S 18in (45cm). Bears tapering, feathery plumes of tiny, deep salmon-red flowers in summer. Foliage is broad and divided into leaflets; flowers, brown when dried, remain on the plant well into winter. Z3–8

***A.* 'Ostrich Plume'.** See *A.* 'Straussenfeder'.

***A.* 'Perkeo'.** See *A.* x *crispa* 'Perkeo'.

***A* 'Professor van der Wielen'** (*thunbergii* hybrid). Clump-forming perennial. H 4ft (1.2m), S to 3ft (1m). Arching sprays of tiny, star-shaped, pure white flowers are borne in early summer above ovate, sharply divided, fresh green leaves. Z4–8

***A* 'Purple Lance'.** See *A. chinensis* var. *taquetii* 'Purpurlanze'.

***A* 'Purpurlanze'.** See *A. chinensis* var. *taquetii* 'Purpurlanze'.

***A.* 'Rheinland'** (*japonica* hybrid). Clump-forming perennial. H 20in (50cm), S 18in (45cm). Compact, conical, upright panicles of tiny, star-shaped, deep pink flowers are produced in early and mid-summer above conspicuously divided, mid-green leaves. Z4–8

A. simplicifolia. Compact, dainty, mid- to late summer-flowering perennial. H 8–12in (20–30cm), S 8in (20cm). Has basal rosettes of ovate, mid-green leaves, which can be lobed or dissected, and arching sprays of tiny white flowers. Z4–8

***A.* 'Sprite'** (illus. p.232). Clump-forming, dwarf, leafy perennial. H 20in (50cm), S to 3ft (1m). Has feathery, tapering panicles of tiny, star-shaped, shell-pink flowers in summer, borne above broad leaves divided into narrowly ovate, toothed leaflets. Z4–8

***A.* 'Straussenfeder'**, syn *A.* 'Ostrich Plume' (illus. p.232). Leafy perennial. H 3ft (90cm), S 2ft (60cm). Arching, feathery,

tapering plumes of tiny, coral-pink flowers are borne in summer above divided leaves; dry, brown flowers remain on plant well into winter. Z3–8
***A.* 'Venus'** illus. p.234.
***A.* 'Willie Buchanan'** (*simplicifolia* hybrid). Clump-forming perennial. H 8–12in (20–30cm), S 8in (20cm). Has neat clumps of divided, red- or bronze-tinted, green leaves. Bears loose, conical sprays of tiny, star-shaped, pale pink flowers, with white petals, in mid- and late summer. Z4–8

ASTILBOIDES

SAXIFRAGACEAE

A genus of a single species of perennial grown for interesting foliage that turns reddish in fall, requiring a semishaded, moist, but well drained position. Propagate by division or seed sown in fall.
A. tabularis, syn. *Rodgersia tabularis*, illus. p.435.

ASTRANTIA

Masterwort

APIACEAE/UMBELLIFERAE

Genus of perennials, widely used in flower arrangements. Requires sun or semishade and well-drained soil. Propagate by division in spring or by seed when fresh, in late summer.
***A.* 'Hadspen Blood'.** Clump-forming perennial. H to 3ft (90cm), S 18in (45cm). In early and mid-summer, produces small, dark red flowers surrounded by dark red bracts above deeply lobed leaves. Z7–10
A. major. Clump-forming perennial. H 12–36in (30–90cm), S 18in (45cm). Bears greenish-white, sometimes pink-tinged flower heads in summer–fall above a dense mass of divided, mid-green leaves. Z4–7. **subsp. *carinthiaca*** see *A.m.* subsp. involucrata. **subsp. *involucrata*** (syn. *A.m.* subsp. *carinthiaca*) has pink-tinged flower heads with long bracts throughout summer. **subsp. *involucrata* 'Margery Fish'** see *A.m.* subsp. *involucrata* 'Shaggy'. **subsp. *involucrata* 'Shaggy'** (syn. *A.m.* 'Margery Fish'), has flower heads with very long bracts with prominent green tips, and deeply cut leaves. **subsp. *involucrata* 'Sunningdale Variegated'** (syn. *A.m.* 'Variegata') has pale pink bracts and attractive leaves unevenly margined creamy yellow. **'Ruby Wedding'** illus. p.238. **'Variegata'** see *A.m.* subsp. *involucrata* 'Sunningdate Variegated'. **'Venice'** is vigorous, with deep pinkish-red flowers.
A. maxima illus. p.278.
***A.* 'Roma'** illus. p.278.

ASTROPHYTUM

CACTACEAE

Genus of slow-growing, perennial cacti, grown for their freely produced, flattish, yellow flowers, some with red centers. Prefers sun and very well-drained,alkaline soil. Allow to dry out in winter. Prone to rot if wet. Propagate by seed sown in spring or summer.
A. asterias, syn. *Echinocactus asterias* (Sea urchin, Silver dollar cactus). Slow-growing, slightly domed, perennial cactus. H 3–4in (8–10cm), S 4in (10cm). Spineless stem has about 8 low ribs bearing small, tufted areoles. Produces bright yellow flowers, to 2½in (6cm) across, in summer. Z13–15 (min. 50°F/10°C)
A. myriostigma, syn. *Echinocactus myriostigma* (Bishop's cap), illus. p.494.
A. ornatum, syn. *Echinocactus ornatus*, illus. p.495.

Asystasia bella. See *Mackaya bella*.

ATHROTAXIS

CUPRESSACACEAE

Genus of conifers with awl-shaped leaves that clasp stems. See also CONIFERS.
A. selaginoides (King William pine). Irregularly conical conifer. H 50–100ft (15–30m) or more, S 12–25ft (4–8m). Has tiny, thick-textured, loosely overlapping, dark green leaves and insignificant, globular cones. Z8–9

ATHYRIUM

WOODSIACEAE/ATHYRIACEAE

Genus of deciduous ferns. Needs shade and humus-rich, moist soil. Remove fading fronds regularly. Propagate by spores in late summer or by division in fall or winter.
A. filix-femina (Lady fern). Deciduous fern. H 2–4ft (60cm–1.2m), S 1–3ft (30cm–1m). Dainty, lance-shaped, much-divided, arching fronds are pale green. Has very variable frond dissection. Z4–9
***A.* 'Ghost'** illus. p.290.
A. goeringianum. See *A. niponicum.*
A. niponicum, syn. *A. goeringianum*. **var. *pictum* 'Burgundy Lace'** illus. p.290. **var. *pictum* 'Silver Falls'** is a deciduous fern. H 20in (50cm), S 16in (40cm). Has triangular, pale green fronds heavily suffused with silvery gray, and with dull pink midribs. Z6–10
A. nipponicum. See *A. niponicum.*
A. otophorum. Semievergreen fern. H and S to 30in (75cm). Has arching, broadly ovate, mid-green or purple-tinged, divided fronds, 18–30in (45–75cm) long. Stalk and midrib are a contrasting deep wine-purple. Z5–8. **var. *okanum*** differs from the species in its pinnae, with stalks 1/16–1/8in (2–3mm) long, rather than nearly sessile. Z6–10

ATRIPLEX

AMARANTHACEAE

Genus of annuals, perennials and evergreen or semievergreen shrubs and subshrubs, grown for their foliage. Grows well in coastal areas. Needs full sun and well-drained soil. Propagate by softwood cuttings taken in summer or by seed sown in fall.
A. halimus (Tree purslane). Semi-evergreen, bushy shrub. H 6ft (2m), S 8ft (2.5m). Ovate leaves are silvery gray. Produces flowers very rarely. Z7–9
A. hortensis* var. *rubra (Red mountain spinach, Red orach). Fast-growing, erect annual. H 4ft (1.2m), S 1ft (30cm). Triangular, deep red leaves, to 6in (15cm) long, are edible. Bears insignificant flowers in summer. Z7–9

AUBRIETA

BRASSICACEAE/CRUCIFERAE

Genus of evergreen, trailing and mound-forming perennials. Useful on dry banks, walls and in rock gardens. Thrives in a sunny position in any well-drained soil. To maintain a compact shape, cut back hard after flowering. Propagate by greenwood cuttings in summer or semiripe cuttings in late summer or fall.
***A.* 'Carnival'.** See *A.* 'Hartswood Purple'.
***A.* x *cultorum* 'Argenteovariegata'** illus. p.354.
***A.* 'Doctor Mules'.** Vigorous, mound-forming, evergreen perennial. H 2–3in (5–8cm), S 12in (30cm). Has rounded, toothed, soft green leaves and bears short spikes of large, single, rich purple flowers in spring. Z5–7
***A.* 'Doctor Mules Variegata'** illus. p.354.
***A. gracilis* 'Kitte Rose'.** Mat-forming perennial. H 2in (5cm), S to 2ft (60cm) or more. Has mid-green leaves and bears single, round, purple flowers with a white center in spring. Z5–9
***A.* 'Greencourt Purple'** illus. p.354.
***A.* 'Hartswood Purple'**, syn. *A.* 'Carnival'. Vigorous, evergreen, mound-forming perennial. H 4in (10cm), S 12in (30cm). Has small, soft green leaves and produces many short spikes of large, single, violet-purple flowers in spring. Z5–7
***A.* 'Joy'** illus. p.353.
***A.* 'Purple Charm'** illus. p.355.
***A.* 'Swan Red'.** Mat-forming perennial. H 2in (5cm), S to 2ft (60cm) or more. Has white-margined, mid-green leaves, and narrow-petaled flowers in spring that open pink and age to dark magenta. Z5–9

AUCUBA

GARRYACEAE

Genus of evergreen shrubs, grown for their foliage and fruits. To obtain fruits, grow both male and female plants. Tolerates full sun through to dense shade. Grow in any but water- logged soil. To restrict growth, cut old shoots back hard in spring. Propagate by semiripe cuttings taken in summer.
A. japonica. Evergreen, dense, bushy shrub. H and S 10ft (3m). Has sturdy, green shoots and glossy, dark green leaves. Small, purplish flowers in midspring are followed on female plants by rounded to egg-shaped, bright red berries. Z6–10.
'Crotonifolia', H and S 6ft (2m), is female, with leaves heavily mottled yellow.
'Golden King', is female, with striking yellow-speckled leaves. **f. *longifolia* 'Salicifolia'** is female, with slender, dark green leaves. **Pepper Pot ('Shilpot')**, 4ft (1.2m), is a compact, male form with glossy green, coarsely toothed leaves, heavily spotted with tiny, yellow dots. **'Rozannie'**, H 3ft (1m), is compact, with broadly elliptic, dark green leaves and bisexual flowers.

AURINIA

BRASSICACEAE/CRUCIFERAE

Genus of biennials or evergreen perennials, grown for their gray-green foliage and showy flower sprays. Good for rock gardens, walls and banks. Needs sun and well-drained soil. Propagate by soft- or greenwood cuttings in early summer or by seed in fall.
A. saxatilis, syn. *Alyssum saxatile* (Gold dust), illus. p.335. **'Citrina'** illus. p.335. **'Dudley Nevill'** is an evergreen, clump-forming perennial. H 9in (23cm), S 12in (30cm). Has ovate, hairy, gray-green leaves and, in late spring and early summer, racemes of many small, 4-petaled, buff-yellow flowers.
'Variegata' illus. p.335. Z4–8

AUSTROCEDRUS

CUPRESSACEAE

Genus of conifers with flattish sprays of scalelike leaves. See also CONIFERS.
A. chilensis, syn. *Libocedrus chilensis* (Chilean incense cedar), illus. p.100.

Avena candida. See *Helictotrichon sempervirens.*
Avena sempervirens. See *Helictotrichon sempervirens.*

AZARA

SALICACEAE

Genus of evergreen shrubs and small trees, grown for their foliage and also for their yellow flowers, which comprise a mass of stamens. Where marginally hardy, plants are best grown against a south- or west-facing wall. Grows in sun or shade, and in fertile, well-drained soil. Propagate by semiripe cuttings in summer.
A. lanceolata. Evergreen, bushy shrub or spreading tree. H and S 15ft (5m). Has narrowly ovate, sharply toothed, bright green leaves. Has small, rounded clusters of pale yellow flowers in late spring or early summer. Z8–10
A. microphylla illus. p.118. **'Variegata'** illus. p.119.
A. serrata illus. p.195.

AZORELLA

APIACEAE/UMBELLIFERAE

Genus of evergreen, tufted or spreading perennials, grown for their flowers and neat, rosetted foliage. Useful as an alpine houseplant. Thrives in full light and well-drained soil. Propagate by division in spring.
A. nivalis. See *A. trifurcata.*
A. trifurcata, syn. *A. nivalis*, illus. p.376.

AZORINA

CAMPANULACEAE

Genus of one species of erect, evergreen shrub with bell-shaped flowers. Needs full light and fertile, moist but well-drained soil. Propagate by seed in spring or by softwood or semiripe cuttings in summer.
A. vidalii, syn. *Campanula vidalii*, illus. p.453.

Azureocereus hertlingianus. See *Browningia hertlingiana.*

B

BABIANA
IRIDACEAE

Genus of mainly spring-flowering cormous perennials with lance-shaped leaves, valued for their brightly colored, funnel-shaped flowers, which are somewhat like freesias. Requires a position in sun and well-drained soil. Propagate in fall by seed or natural division of corms.
B. disticha. See *B. fragrans*.
B. fragrans, syn. *B. disticha, B. plicata*. Spring-flowering corm. H 4–8in (10–20cm), S 2–3in (5–8cm). Has a fan of hairy, erect, basal leaves and short spikes of scented violet-blue flowers, with yellow-patched petals. Z13–15 (min. 41°F/5°C)
B. plicata. See *B. fragrans*.
B. rubrocyanea (Winecups) illus. p.418.
B. stricta. Spring-flowering corm. H 4–8in (10–20cm), S 2–3in (5–8cm). Produces a fan of hairy, erect, basal leaves and short spikes of up to 10 purple, blue, cream, or yellow flowers, sometimes red-centered. Z13–15 (min. 41°F/5°C)

BACCHARIS
ASTERACEAE/COMPOSITAE

Genus of mainly fall-flowering evergreen or deciduous shrubs and herbaceous perennials, grown for their foliage and fruits. Useful for exposed, coastal gardens and dry soil. Requires a position in full sun and well-drained soil. Propagate by softwood cuttings in summer.
B. halimifolia (Bush groundsel). Vigorous, deciduous, bushy shrub. H and S 12ft (4m). Ovate leaves are gray-green, and sharply toothed. Large clusters of tiny, white flower heads in midfall precede fluffy, white heads of tiny fruits. Z3–7

Baculellum articulatum. See *Curio articulata*.
Bahia lanata. See *Eriophyllum lanatum*.

BALLOTA
LAMIACEAE/LABIATAE

Genus of perennials and evergreen or deciduous subshrubs, grown for their foliage and flowers. Requires very well-drained soil and full sun. Cut back in spring before growth starts. Propagate by semiripe cuttings in summer.
B. acetabulosa illus. p.165.
B. pseudodictamnus illus. p.347.

BAMBUSA
POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
B. glaucescens. See *B. multiplex*.
B. multiplex, syn. *B. glaucescens* (Hedge bamboo). Evergreen bamboo. H 10–50ft (3–15m), S indefinite. Produces slender, arching canes with narrow leaves, 4–6in (10–15cm) long. Useful for a hedge or windbreak. Z8–11

BANKSIA
PROTEACEAE

Genus of evergreen shrubs and trees, grown for their flowers and foliage. Requires full light and sharply drained, sandy soil that contains few phosphates or nitrates. Water containerized plants moderately when in full growth, sparingly at other times. Freely ventilate plants grown under glass. Propagate by seed in spring.
B. baxteri. Evergreen, spreading, open shrub. H and S 6–10ft (2–3m). Leathery, mid-green leaves are strap-shaped, cut from the midrib into triangular, sharply pointed lobes. Produces dense, spherical heads of small, tubular, yellow flowers in summer. Z10–11
B. coccinea illus. p.456.
B. ericifolia (Heath banksia). Evergreen, irregularly rounded, wiry, freely branching shrub. H 10–20ft (3–6m), S 6–12ft (2–4m). Has small, needlelike leaves and dense, upright, bottlebrushlike spikes, each 8in (20cm) long, of small, tubular, bronze-red or yellow flowers in fall or winter. Z10–11
B. serrata. Evergreen shrub or tree of bushy habit. H 10–70ft (3–20m), S 5–25ft (1.5–8m). Oblong to lance-shaped, saw-toothed, leathery leaves are mid- to deep green. Small, tubular, reddish-budded, cream flowers are borne in dense, upright, bottlebrushlike spikes, 4–6in (10–15cm) long, from summer to late fall. Z10–11

BAPTISIA
PAPILIONACEAE/LEGUMINOSAE

Genus of summer-flowering perennials, grown for their flowers. Requires full sun and well-drained, preferably sandy soil. Best left undisturbed once planted. Propagate by division in early spring or by seed in fall.
B. australis (False indigo) illus. p.240.

Barbacenia elegans. See *Vellozia elegans*.

BARLERIA
ACANTHACEAE

Genus of evergreen perennials and shrubs, grown for their flowers. Needs full light or partial shade and fertile soil. Water containerized plants well when in full growth, moderately at other times. In the growing season, prune tips of young plants to encourage branching. For a more compact habit, shorten long stems after flowering. Can be propagated by seed in spring or by greenwood or semiripe cuttings in summer.
B. cristata (Philippine violet). Evergreen, semierect shrub. H 3–4ft (1–1.2m), S 18–28in (45–70cm). Has elliptic, coarsely haired leaves. Tubular, light violet flowers, sometimes pale pink or white, are borne from upper leaf axils in summer. Z10–11 (min. 50°F/10°C)
B. obtusa. Evergreen, erect, spreading shrub. H and S to 3ft (1m). Leaves are elliptic. Tubular, mauve flowers are produced from upper leaf axils in winter–spring. Z9–12 (min. 50°F/10°C)

Barosma pulchella. See *Agathosma pulchella*.
Bartonia aurea. See *Mentzelia lindleyi*.

BARTLETTINA
ASTERACEAE/COMPOSITAE

Genus of small evergreen trees and shrubs, grown mainly for their flowers, some also for their architectural foliage. Needs full light or partial shade. Will grow in any conditions, although most species prefer moist but well-drained soil. Water containerized plants freely when in full growth, moderately at other times. Prune shrubs lightly after flowering or in spring. Propagate by seed in spring; can be propagated by softwood or greenwood cuttings in summer. Red spider mite and whitefly may be troublesome.
B. sordida, syn. *Eupatorium ianthinum, E. sordidum.* Evergreen, rounded, robust-stemmed shrub. H 6–10ft (2–3m), S 5–8ft (1.5–2.5m). Ovate, serrated, deep green leaves are red-haired. Produces fragrant, pomponlike, violet-purple flower heads in flattened clusters, mainly in winter. Z13–15 (min. 50°F/10°C)

BASSIA
SYN. KOCHIA
AMARANTHACEAE/CHENOPODIACEAE

Genus of annuals and perennials, grown for their habit, the feathery effect of their leaves, and their fall tints. Does best in sun and in fertile, well-drained soil. May require support in very windy areas. Propagate by seed sown under glass in early to mid-spring, or outdoors in late spring.
B. scoparia* f. *trichophylla, syn. *Kochia trichophylla* (Burning bush, Summer cypress), illus. p.316.

BAUERA
CUNONIACEAE

Genus of evergreen shrubs, grown mainly for their flowers. Needs full sun and humus-rich, well-drained, neutral to acidic soil. Water potted plants moderately, less when not in full growth. Remove straggly stems after flowering. Propagate by seed sown in spring or by semiripe cuttings taken in late summer.
B. rubioides. Evergreen, bushy, wiry-stemmed shrub, usually of spreading habit. H 6in–10ft (15cm–3m) S 2–10ft (60cm–3m). Leaves each have 3 ovate to lance-shaped, glossy leaflets. Bowl-shaped, pink or white flowers are borne in early spring and summer. Z13–15 (min. 37–41°F/3–5°C)

BAUHINIA
CAESALPINIACEAE

Genus of evergreen or deciduous trees, shrubs and perennial climbers, grown mainly for their orchidlike flowers. Requires full light and fertile, well-drained soil. Water containerized specimens freely when in full growth, less in winter. Thin out congested growth after flowering. Propagate by seed in spring.
B. galpinii, syn. *B. punctata.* Evergreen, spreading shrub, occasionally semi-climbing. H 6–10ft (2–3m), S 3–10ft (1–3m). Has 2-lobed leaves and, in summer, bears fragrant, bright brick-red flowers. Z13–15 (min. 45°F/7°C)
B. punctata. See *B. galpinii*.
B. variegata illus. p.450. **'Candida'** is a deciduous tree, rounded when young, spreading with age. H 6ft (2m), S 10ft (3m). Has broadly ovate, deeply notched leaves and fragrant, pure white flowers, 4in (10cm) across, in winter–spring or sometimes later. Z13–15 (min. 45°F/7°C)

BEAUCARNEA
ASPARAGACEAE

Genus of evergreen shrubs and trees, grown mainly for their intriguing overall appearance. Needs full light and sharply drained, fertile soil; tolerates drought conditions. Water container plants moderately; between each watering, allow potting medium to almost dry out. Propagate by seed or root offsets in spring.
B. recurvata, syn. *Nolina recurvata, N. tuberculata* (Elephant's foot, Pony-tail), illus. p.451.

BEAUMONTIA
APOCYNACEAE

Genus of evergreen, woody-stemmed, twining climbers, grown for their large, fragrant flowers and handsome leaves. Needs fertile, well-drained soil and full light. In growing season, water freely, sparingly at other times. Provide support. Thin out previous season's growth after flowering. Propagate by semiripe cuttings in late summer.
B. grandiflora (Herald's trumpet) illus. p.459.

BEGONIA
BEGONIACEAE

Genus of evergreen or deciduous shrubs and small, treelike plants, perennials and annuals. Grown for their colorful flowers and/or ornamental leaves. Prefers slightly acidic soil. Susceptible to powdery mildew and botrytis from late spring to early fall. Commonly cultivated begonias are divided into the following groupings, each with varying cultivation requirements. See also feature panel p.317.

Cane-stemmed begonias
Evergreen, woody perennials, many known as "Angelwings," with usually erect, canelike stems bearing regularly spaced, swollen nodes and flowers in large, pendulous panicles. Encourage branching by pinching out growing tips. New growth develops from base of plant. Grow under glass in good light but not direct sun (poor light reduces quantity of flowers) and in free-draining, loam-based potting mix. Stake tall plants. Propagate in spring by seed or tip cuttings.

Rex-cultorum begonias
Mostly evergreen, rhizomatous perennials of variable habit derived from crosses of *B. rex* and related species. Grown for their brilliantly colored, ovate to lance-shaped leaves, 3–12in (8–30cm) long, that are sometimes spirally twisted. Prefers 40–75% relative humidity. Grow

under glass in cold-winter regions, in partial shade and well-drained soil; water sparingly. Do not allow water to remain on the leaves, or they will be susceptible to botrytis. Propagate in spring, by seed, leaf cuttings, or division of rhizomes.

Rhizomatous begonias
Variable, mostly evergreen, rhizomatous perennials, grown for their foliage and small, single flowers. Smooth, crested or puckered, green or brown leaves, 3–12in (8–30cm) long, often marked silver, are sometimes spirally twisted. Creeping cultivars are more freely branched than erect ones and are useful for hanging baskets. Enjoys 40–75% relative humidity. Grow under glass incool climates, in partial shade and in well-drained soil; water only sparingly. Do not allow water to remain on the leaves, or they will be susceptible to botrytis. Propagate in spring by seed, leaf cuttings, or division of rhizomes.

Semperflorens begonias
Evergreen, bushy perennials, derived from *B. cucullata* var. *hookeri*, *B. schmidtiana* and other species, often grown as bedding annuals. Stems are soft, succulent, and branch freely, bearing generally rounded, green, bronze, or variegated leaves, 2in (5cm) long. Flowers are single or double. Pinch out growing tips to produce bushy plants. Needs sun or partial shade and well-drained soil. Propagate in spring by seed or stem cuttings.

Shrublike begonias
Evergreen, multistemmed, bushy perennials, usually freely branched, with flexible, erect or pendent stems, often hairy. Leaves may be hairy or glabrous, up to 6in (15cm) across and 4–12in (10–30cm) long. Single flowers are pink, cream or white. Prefers 55% relative humidity. Grow under glass in good light and in moist but well-drained soil. Propagate in spring by seed or stem cuttings.

Tuberous begonias (including the Tuberhybrida, Multiflora and Pendula begonias)
Mostly upright, bushy, tuberous, winter-dormant perennials grown for their foliage and flowers. Tuberhybrida begonias, H and S 30in (75cm), vary from pendent to erect, with sparsely branched, succulent stems and ovate, pointed, glossy, bright to dark green leaves, 8in (20cm) long. Most are summer-flowering and double-flowered. Multiflora cultivars, H and S 12in (30cm), are bushier and have 3in (8cm) long leaves, and single, semidouble or double, flowers, each 1½–2in (4–5cm) across, in summer; they tolerate full sun. Pendula cultivars, H to 3ft (1m), have long, thin, trailing stems; leaves are 2½–3in (6–8cm) long. Abundant single or double flowers are borne in summer. Outdoors, grow in dappled shade and moist conditions; under glass, plant in cool shade with 65–70% relative humidity. Tubers are dormant in winter. Start into growth in spring for midsummer to early-fall flowering. Remove all flower buds until stems show at least 3 pairs of leaves; with large-flowered types, remove flanking buds and allow only central male bud to flower. Plants may require staking. Propagate in spring by seed, stem, or basal cuttings or division of tubers.

Winter-flowering begonias
Evergreen, low-growing, very compact perennials, with succulent, thin stems, that are often included in the tuberous group. Two main groups are recognized: the single-flowered, usually pink or white, Lorraine, Cheimantha, or Christmas begonias; and the single, semidouble or double, Elatior and Rieger begonias that occur in a wide range of colors. Leaves are green or bronze, 2in (5cm) long. Flowers are borne mainly from late fall to midspring. Enjoys 40% relative humidity. Indirect sun and moist soil are preferred. Cut old stems to 4in (10cm) after flowering. Propagate in spring by seed or stem cuttings.

B. albopicta (illus. p.317). Fast-growing, evergreen, cane-stemmed begonia. H to 3ft (1m), S 1ft (30cm). Freely branching, green stems turn brown-green when mature. Narrowly ovate to lance-shaped, wavy-edged, green leaves are silver-spotted. Produces clusters of single, green-white flowers in summer. Z11–12 (min. 50°F/10°C)
B. angularis, syn. *B. compta*, *B. stipulacea* of gardens, *B zebrina*. Evergreen, cane-stemmed begonia. H 2ft (60cm), S 1½ft (45cm). Bears well-branched, angular stems and ovate, wavy-edged, 4–6in (10–15cm) long, gray-green leaves, with silver-gray veins, pale green beneath. Single, white flowers are produced throughout the year. Z13–15 (min. 50°F/10°C)
***B.* 'Beatrice Haddrell'.** Evergreen, creeping, rhizomatous begonia. H 8–12in (20–30cm), S 10–12in (25–30cm). Ovate leaves are deeply cleft, 3–6in (8–15cm) long, and dark green with paler veins. Produces single, pink flowers, above foliage, in winter. Z13–15
***B.* 'Benitochiba'** (illus. p.317)**.** Rhizomatous begonia. H 12in (30cm) or more, S 15in (38cm). Has palmate leaves, 8in (20cm) or more across, comprising 6–8 toothed, narrowly ovate leaflets with red leaf-stalks; leaves are silver-gray suffused pink when young, later turning silver. In fall and early winter, produces small clusters of pink flowers. Z9–11 (min. 50°F/10°C)
***B.* 'Bethlehem Star'.** Evergreen, creeping, rhizomatous begonia. H 8–12in (20–30cm), S 10–12in (25–30cm). Has ovate, slightly indented, almost black leaves, to 3in (8cm) long, each with a central, creamy-green star. In winter, bears profuse, single, pale pink flowers, with darker pink spots. Z13–15 (min. 50°F/10°C)
***B.* 'Billie Langdon'** (illus. p.317). Upright Tuberhybrida begonia. H 2ft (60cm), S 1½ft (45cm). Bears abundant, heavily veined, double, white flowers, each 7in (18cm) across, with a perfect rose-bud center, in summer. Z13–15 (min. 50°F/10°C)
***B.* 'Bokit'.** Evergreen, erect, rhizomatous begonia. H 8–12in (20–30cm), S 10–14in (25–35cm). Has ovate, spirally twisted, yellow-green leaves with brown tiger stripes. Bears abundant, single, white flowers, flecked with pink, in winter. Z13–15 (min. 50°F/10°C)
***B. boliviensis* 'Bonfire'.** See *B.* Bonfire ('Nzcone').
***B.* Bonfire ('Nzcone')**, syn. *B. boliviensis* 'Bonfire' (illus. p.317). Semitrailing begonia. H 30in (75cm), S 3ft (1m). Succulent stems bear lance-shaped, slightly hairy leaves, 5in (12cm) long, with narrow, toothed, red edges. Produces abundant, pendulous, single, orange-red flowers from late spring to fall. Z11–12 (min. 50°F/10°C)
B. bowerae (Eyelash begonia; illus. p.317). Evergreen, creeping, rhizomatous begonia. H 10–12in (25–30cm), S 8–10in (20–25cm). Has ovate, bright green leaves, 1in (25cm) long, with chocolate marks and bristles around edges. Bears single, pink-tinted, white flowers freely in winter. Z11–12 (min. 50°F/10°C)
***B.* 'Can-can'** illus. p.323.
***B. carolineifolia*.** Rhizomatous begonia with an erect, branched, woody rhizome. H 3ft (1m), S 1½ft (45cm). Palmate, dark green leaves, 12in (30cm) across, are divided into 6–10 short-stalked, wavy-margined, lance-shaped to ovate leaflets. Bears pale pink flowers, with darker spots, in late winter and spring. Z10–11 (min. 50°F/10°C)
B. coccinea (Angelwing begonia). Evergreen, cane-stemmed begonia. H 4ft (1.2m), S 1ft (30cm). Produces narrowly ovate, glossy, green leaves, buff-colored beneath, and, in spring, many single, pink or coral-red flowers. Z13–15 (min. 50°F/10°C)
***B.* 'Cocktail Series'.** Semperflorens begonia. H and S 8–12in (20–30cm). Has rounded, wavy, green-bronze leaves and pink, red or white flowers, from summer until fall frosts. Z13–15 (min. 50°F/10°C)
***B. compta*.** See *B. angularis*.
***B.* 'Corallina de Lucerna'.** See *B.* 'Lucerna'.
***B. dichroa*.** Evergreen, cane-stemmed begonia. H 14in (35cm), S 10in (25cm). Ovate leaves are mid-green, 5in (12cm) long; new leaves occasionally have silver spots. Bears small, single, orange flowers, with a white ovary, in summer. Z13–15 (min. 50°F/10°C)
***B.* Dragon Wing Red ('Bepared')** (Dragon Wing Series; illus. p.317). Vigorous, Semperflorens begonia. H and S 1½ft (45cm). Semitrailing, succulent stems bear ovate, slightly waxy, mid-green leaves, 2–3in (5–8cm). Produces clusters of single, scarlet flowers from late summer to fall. Z11–12 (min. 50°F/10°C)
B. dregei (Mapleleaf begonia; illus. p.317). Tuberous begonia. H 30in (75cm), S 2ft (60cm). Has small, maplelike, lobed, purple-veined, bronze leaves, red beneath and at times silver-speckled when young. Bears profuse, pendent, single, white flowers in summer. Needs winter rest. Z11–12 (min. 50°F/10°C)
***B.* 'Erythrophylla'**, syn. *B.* 'Feastii'. Evergreen, creeping, rhizomatous begonia. H 8in (20cm), S 9–12in (23–30cm). Thick, mid-green leaves, 3–6in (8–15cm) long, are almost rounded, with leaf stalks attached to center of red undersides; slightly wavy margins have white hairs. Bears single, light pink flower, above the leaves, in early spring. Z13–15 (min. 50°F/10°C)
***B.* 'Escargot'** (illus. p.317). Rex-cultorum begonia. H 10in (25cm), S 18–20in (45–50cm). Has asymmetric, ovate, hairy, olive-green leaves, 9½–12in (24–30cm) long, each with a snaillike, central silver band. Z11–12 (min. 50°F/10°C)
***B.* 'Feastii'.** See *B.* 'Erythrophylla'.
***B.* 'Fireworks'.** Rex-cultorum begonia. H 8in (20cm) or more, S 12in (30cm). Bears puckered, pointed, heart-shaped, silver-gray leaves, to 10in (25cm) long, with purple veins and raspberry-red margins. Z9–11 (min. 50°F/10°C)
B. foliosa*.** Evergreen, shrublike begonia. H 12–20in (30–50cm), S 12–14in (30–35cm). Bears erect, then arching stems and ovate, toothed, dark green leaves, ½in (1cm) long. Has very small, single, white flowers in spring and fall. Z13–15 (min. 50°F/10°C). **var. *miniata (syn. *B. fuchsiioides, B. fuchsioides* var. *miniata*; Fuchsia begonia) H to 4ft (1.2m), S 1ft (30cm), has numerous ovate, toothed dark green leaves, 1½in (4cm) long. Pendent, single, bright red flowers are borne in winter.
***B. fuchsioides*.** See *B. foliosa* var. *miniata*.
***B. fuchsioides* var. *miniata*.** See *B. foliosa* var. *miniata*.
***B.* 'Gloire de Lorraine'** (Christmas begonia, Lorraine begonia). Evergreen, winter-flowering, Cheimantha begonia. H 12in (30cm), S 12–14in (30–35cm). Well-branched with rounded, bright green leaves and single, white to pale pink flowers. Male flowers are sterile, female, highly infertile. Z13–15 (min. 50°F/10°C)
***B. gracilis* var. *martiniana*.** See *B. martiana*.
***B. grandis* subsp. *evansiana*.** See *B. grandis* subsp. *grandis*.
***B. grandis* subsp. *grandis*,** syn. *B. grandis* subsp. *evansiana*, illus. p.278.
***B.* 'Green Gold'.** Rex-cultorum begonia. H 12in (30cm), S 15in (38cm). Bears ovate, light green leaves, 8in (20cm) long, with brown-marked, spirally arranged basal lobes and margins, and red-marked undersides. Z9–11 (min. 50°F/10°C)
***B. haageana*.** See *B. scharffii*.
***B.* Illumination Series.** Double and semidouble Pendula begonia. H 2ft (60cm), S 12in (30cm). Has ovate, toothed, brightly veined, mid- to dark green leaves. Bears prolific, double flowers, 3in (8cm) across, in red, pink, orange and yellow shades, and white, including bicolors. Z13–15. **'Illumination Salmon Pink'** (illus. p.317) is pale salmon-pink.
***B. imperialis*.** Rhizomatous begonia. H 5in (13cm), S 9in (23cm). Ovate, toothed, light green leaves, 4in (10cm) long, have puckered edges and silver-green splashes on the main veins. Produces sprays of sparse white flowers, to ½in (1cm) across, in winter. Z13–15 (min. 50°F/10°C)
***B.* 'Inferno'.** Vigorous tuberous begonia with trailing stems. H and S 12in (30cm). Has lance-shaped, bright green leaves. From summer to fall, bears weather-resistant, pendulous, single, bright orange-red flowers. Z9–11 (min. 50°F/10°C)
***B.* 'Iron Cross'.** See *B. masoniana*.
***B. listada*.** Shrublike begonia. H 12in (30cm) or more, S 20in (50cm). Has softly hairy, shield-shaped, olive-green leaves, 3–4in (8–10cm) long, with a central band of pale emerald-green and red undersides. Pink-tinted, white flowers are borne sporadically all year. Z9–11 (min. 50°F/10°C)
***B.* 'Little Brother Montgomery'.** Shrublike begonia. H 16in (40cm), S 18in (45cm). Has maplelike, silver-spotted, deep

green leaves, to 7in (19cm) across, with red veins. Pink flowers, are borne in late winter and early spring. Z9–11 (min. 50°F/10°C)
***B.* 'Lucerna'**, syn. *B.* 'Corallina de Lucerna'. Vigorous, evergreen, cane-stemmed begonia. H 6–7ft (2–2.2m), S 14in (35cm). Ovate, silver-spotted, bronze-green leaves, 10–14in (25–35cm) long, have tapered tips. Bears large panicles of single, deep pink flowers year-round; male flowers stay almost closed. Z13–15 (min. 50°F/10°C)
B. luxurians (Palm-leaf begonia). Shrublike begonia. H 30in (75cm), S 2ft (60cm). Has slightly hairy, mid-, dark, or bronze-green leaves, 10in (25cm) across, with up to 16 leaflets. Leave are borne umbrellalike on red-purple, canelike stems, to 6in (15cm) tall. Bears slightly fragrant, yellowish-white flowers, from spring to summer. Z9–11 (min. 50°F/10°C)
***B.* 'Madame Richard Galle'.** Upright Tuberhybrida begonia. H 10in (25cm), S 8in (20cm). Produces an abundance of small, double, soft apricot flowers in summer. Z13–15 (min. 50°F/10°C)
B. manicata. Evergreen, erect, rhizomatous begonia. H 2ft (60cm), S 12–16in (30–40cm). Large, ovate, brown-mottled, green leaves have a collar of stiff, red hairs around leaf stalk, below each leaf base. Bears single, pale pink flowers in very early spring. Propagate by plantlets when in growth. Z13–15 (min. 50°F/10°C). **'Crispa'** (syn. *B.m.* 'Cristata') has deeper pink flowers and light green leaves with crested margins. **'Cristata'** see *B.m.* 'Crispa'.
B. martiana, syn. *B. gracilis* var. *martiniana*. Tuberous begonia. H 24–30in (60–75cm), S 16in (40cm). Has small, ovate to lance-shaped, lobed, pale green or brown-green leaves with tapering tips and large, fragrant, single, pink flowers, 1in (25cm) across, in summer. Z13–15 (min. 50°F/10°C)
B. masoniana, syn. *B.* 'Iron Cross' (Iron cross begonia; illus. p.317). Evergreen, creeping, rhizomatous begonia. H 18–24in (45–60cm), S 12–18in (30–45cm). Bears ovate, toothed, rough, bright green leaves, 6in (15cm) long, with tapering tips and cross-shaped, black or dark brown centers. Has single, pink-flushed, white flowers in summer. Z11–12 (min. 50°F/10°C)
B. mazae. Evergreen, fibrous-rooted begonia with slender, pendent stems. H to 9in (23cm), S indefinite. Ovate, sharp-pointed, bronze-green leaves are 3in (7cm) long, with red-brown markings along the veins. In early spring, bears profuse, fragrant, single, pink flowers. Good for a hanging basket. Z13–15 (min. 50°F/10°C)
***B.* 'Merry Christmas'**, syn. *B.* 'Ruhrtal' (illus. p.317). Rex-cultorum begonia. H and S 10–12in (25–30cm). Has ovate, glossy, deep pink leaves, 8in (20cm) long, outlined emerald-green, with dark red centers and margins. Z11–12 (min. 50°F/10°C)
B. metallica (Metal-leaf begonia). Evergreen, shrublike begonia. H 3ft (90cm), S 2ft (60cm). Has white-haired stems and ovate, toothed, silver-haired, bronze-green leaves, 7in (18cm) long, with dark green veins, red beneath. Bears single, pink flowers, with red bristles, in summer–fall. Z13–15 (min. 50°F/10°C)
***B.* Mocca Series**, syn. *B.* x *tuberhybrida* Mocha series. Bushy, dark-leaved, Tuberhybrida begonia. H and S 12in (30cm). Has green-veined, chocolate-brown leaves and, held tightly above the foliage, double flowers, 3–4in (8–10cm) across, in about 6 varied, individual colors. Z11–12. (min. 50°F/10°C). **'Mocca Scarlet'** (illus. p.317) is deep red with very dark leaves.
***B.* 'Namur'.** Compact Rex-cultorum begonia. H 8in (20cm), S 12in (30cm). Has asymmetric, rounded, slightly wavy-edged, gray-green leaves, to 7in (18cm) long, centrally blotched with dark olive green, narrowly margined with red, and with a bright magenta flush that intensifies on maturity. Z9–11 (min. 50°F/10°C)
***B.* Non-stop Series**, syn. *B.* x *tuberhybrida* Nonstop Series. Bushy Tuberhybrida begonias. H and S 12in (30cm). Double flowers, 3–4in (8–10cm) across, are borne in about 12 varied individual colors and mixtures, held close to heart-shaped, mid-green leaves. Z11–12. (min. 50°F/10°C). **'Non-stop White'** (illus. p.317) has creamy-centered, white flowers opening from pink buds.
***B.* 'Orange Rubra'** (illus. p.317). Slow-growing, evergreen, cane-stemmed begonia. H 20in (50cm), S 18in (45cm). Ovate leaves are light green. Produces abundant clusters of single, orange flowers all year. Z11–12 (min. 50°F/10°C)
***B.* 'Organdy'.** Weather-resistant Semperflorens begonia. H and S 10in (25cm). Has rounded, waxy, green-bronze leaves and bears pink, red or white flowers throughout summer, until the first frost. Z13–15 (min. 50°F/10°C)
B. paulensis. Evergreen, creeping, rhizomatous begonia. H and S 10–12in (25–30cm). Erect stems produce rounded, mid-green leaves, 6in (15cm) long, with 'seersucker' surfaces criss-crossed with a spider's web of veins. Produces single, cream-white flowers, with wine-colored hairs, in late spring. Z13–15 (min. 50°F/10°C)
***B.* 'Pink Champagne'.** Rex-cultorum begonia. H 10in (25cm), S 1½ft (45cm). Bears asymmetrical, ovate, metallic-pink leaves, 9in (23cm) long, veined and irregularly edged with dark brown-purple. Z9–11 (min. 50°F/10°C)
***B.* 'Président Carnot'.** Vigorous, evergreen, cane-stemmed begonia. H to 7ft (2.2m), S 1½ft (45cm). Erect stems bear 11in (28cm) long, "angelwing," green leaves, with lighter spots. Produces large panicles of single, pink flowers, each 1½in (4cm) across, year-round. Z13–15 (min. 50°F/10°C)
***B.* 'Princess of Hanover'.** Rex-cultorum begonia. H and S 10–12in (25–30cm). Has spirally twisted, deep green leaves, 8in (20cm) long, with bands of silver, edged with ruby-red; entire leaf surfaces are covered with fine, pink hairs. Z13–15 (min. 50°F/10°C)
B. pustulata. Evergreen, creeping, rhizomatous begonia. H 6–8in (15–20cm), S 8–10in (20–25cm). Has ovate, fine-haired, dark green leaves, with small blisters or pustules, and single, rose-pink flowers in summer. Z13–15. (min. 50°F/10°C). **'Argentea'** (syn. *B.* 'Silver') has silver-splashed leaves and produces creamy-white flowers.
***B.* 'Red Robin'.** Rex-cultorum begonia. H 6in (15cm) or more, S to 10in (25cm). Has smooth, heart-shaped leaves, to 6in (15cm) long, with broad, matte black margins and a star-shaped, blood-red center. Z11–12 (min. 50°F/10°C)
B. rex. Rhizomatous begonia, the parent of the Rex-cultorum begonias. H 10in (25cm), S 12in (30cm). Has 8–10in (20–25cm) long, heart-shaped, deep green leaves, with a metallic sheen, zoned silvery-white above. Produces pink flowers in winter. Z13–15 (min. 50°F/10°C)
***B.* 'Rocheart'.** Compact, vigorous Rex-cultorum begonia. H 10in (25cm), S 16in (40cm). Has ovate to rounded, dark yellowish-green leaves, 8in (20cm) long, spirally marked with metallic gray-green spots and patches. Z9–11 (min. 50°F/10°C)
***B.* 'Roy Hartley'** (illus. p.317). Upright Tuberhybrida begonia. H 2ft (60cm), S 1½ft (45cm). In summer, bears double, salmon-colored flowers, with soft pink tinge. Color depth depends on light intensity. Has few side shoots. Z12–15 (min. 50°F/10°C)
***B.* 'Ruhrtal'.** See *B.* 'Merry Christmas'.
B. scharffii, syn. *B. haageana* (illus. p.317). Evergreen, shrublike begonia. H 4ft (1.2m), S 2ft (60cm). Stems are often covered with white hairs. Has ovate, fine-haired, dark metallic-green leaves, 11in (28cm) long, with tapered tips and reddish-green undersides. Ssingle, pinkish-white flowers, each with a pink beard, are produced in fall–summer. Z11–12 (min. 50°F/10°C)
***B.* 'Scherzo'.** Evergreen, creeping, rhizomatous begonia. H 10–12in (25–30cm), S 12–14in (30–35cm). Ovate leaves are small, highly serrated, and yellow with black marks. Bears single, white flowers in early spring. Z13–15 (min. 50°F/10°C)
B. serratipetala (illus. p.317). Evergreen, trailing, shrublike begonia. H and S 1½ft (45cm). Obliquely ovate leaves are highly serrated and bronze-green, with raised, deep pink spots. Produces mostly female, single, deep pink flowers intermittently throughout the year. Water sparingly. Z11–12 (min. 50°F/10°C)
***B.* 'Silver'.** See *B. pustulata* 'Argentea'.
***B.* 'Silver Jewell'.** Spreading, compact Rhizomatous begonia. H 8in (20cm), S 16in (40cm). Has dark green leaves, 4in (10cm) long, heavily marked with silver along the main veins, with the warty upper leaf surfaces covered with fine hairs. Enjoys humid conditions. Z9–11 (min. 50°F/10°C)
***B.* 'Snowcap'.** Cane-stemmed begonia with erect canes and strong lateral growth. H 16in (40cm) or more, S to 2ft (60cm). Has pointed, obliquely ovate, smooth, olive-green leaves, to 8in (20cm) long, with silver spots, white tips, and dull red undersides. Bears clusters of 3–4 rose-pink flowers between spring and early fall. Needs support. Z9–11 (min. 50°F/10°C)
B. stipulacea of gardens. See *B. angularis*.
***B.* 'Sugar Candy'.** Tuberhybrida begonia. H 2ft (60cm), S 1½ft (45cm). Leaves are mid-green. Produces double, clear pink flowers in summer. Z13–15 (min. 50°F/10°C)
***B.* SuperCascade Series.** Vigorous, pendent, Tuberhybrida begonias. H 8–12in (20–30cm), S to 36in (90cm). Have bright green leaves and, from midsummer to fall, a succession of double and semidouble flowers in white, cream, yellow, pink, salmon-orange, dark orange, and scarlet. Z9–11. (min. 50°F/10°C). **'Apricot Shades'** has flowers in shades of bright apricot-orange. **'Pink Bicolor'** has pale pink flowers edged with darker pink.
B. sutherlandii illus. p.327.
B. taliensis illus. p.278.
***B.* 'Thurstonii'.** Evergreen, shrublike begonia. H 6ft (2m), S 1½ft (45cm). Has rounded to ovate, smooth, glossy, bronze-green leaves, with dark red veins, and, in summer, bears single, pink flowers. Z13–15 (min. 50°F/10°C)
***B.* 'Tiger Paws'** (illus. p.317). Evergreen, creeping, rhizomatous begonia. H 4in (10cm), S 12in (30cm). Small, rounded, striking bright green leaves, with yellow and brown splashes, have bristly, white hairs on the margins. Many clusters of small, pink-speckled white flowers are borne well above the foliage in spring and summer. Z11–12 (min. 50°F/10°C)
***B.* x *tuberhybrida* Mocha Series.** See *B.* Mocca Series.
***B.* x *tuberhybrida* Nonstop Series.** See *B.* Nonstop Series.
B. versicolor. Evergreen, creeping, rhizomatous begonia. H 6in (15cm), S 12in (30cm). Produces broadly ovate or oblong, velvety leaves, 3in (8cm) long, in shades of mahogany, apple-green and maroon, and, from spring to summer, single, salmon-pink flowers. Z13–15 (min. 64°F/18°C)
B. xanthina. Evergreen, bushy, creeping, rhizomatous begonia. H 10–12in (25–30cm), S 12–14in (30–35cm). Bears ovate, dark green leaves, 6–9in (15–23cm) long, with yellow veins, purple and hairy beneath. Pendent, single, orange-yellow flowers are borne in summer. Z13–15 (min. 50°F/10°C)
B. zebrina. See *B. angularis*.

Belamcanda chinensis. See *Iris domestica*.

BELLEVALIA

ASPARAGACEAE

Genus of spring-flowering bulbs, similar to *Muscari*, but with longer, more tubular flowers. Some species have ornamental value, but most are uninteresting horticulturally. Needs an open, sunny position and well-drained soil that dries out in summer. Propagate by seed, preferably in fall.
B. hyacinthoides, syn. *Strangweja spicata*, illus. p.419.
B. paradoxa of gardens. See *B. pycnantha*.
B. pycnantha, syn. *B. paradoxa* of gardens, *Muscari pycnantha*. Spring-flowering bulb. H 12in (30cm), S 2in (5cm). Bears strap-shaped, semierect, basal, grayish-green leaves. Bears tubular, deep dusky-blue flowers, ¼in (5mm) long, with yellow tips, in a dense, conical spike. Z7–9
B. romana illus. p.399.

BELLIS

Daisy

ASTERACEAE/COMPOSITAE

Genus of rosette-forming, carpeting perennials. Grow in sun or partial shade and in fertile, very well-drained soil. Deadhead regularly. Propagate by seed in early summer or by division after flowering.
B. perennis (Common daisy). Stoloniferous, carpeting perennial. Cultivars are grown as biennials. H and S 6–8in (15–20cm). All have inversely lance-shaped to spoon-shaped, mid-green leaves and semidouble to fully double flower heads in spring. Large-flowered (flower heads to 8cm/3in across) and

miniature-flowered (flower heads to 2.5cm/1in across) cultivars are available. Z4–8. **Habanera Series** cultivars bear long-petaled, pink, white, red or bicolored flower heads, to 2½in (6cm) across, in early summer. **Pomponette Series** cultivars bear double, pink, white or red flower heads, to 1½in (4cm) across, with quilled petals. **Roggli Series** cultivars flower early and prolifically, with semidouble, red, rose-pink, salmon-pink or white flower heads, to 1¼in (3cm) across. **Tasso Series** cultivars have double, pink, white or red flower heads, to 2½in (6cm) across, with quilled petals. Z4–8

Beloperone guttata. See *Justicia brandegeeana*.

BERBERIDOPSIS

BERBERIDOPSIDACEAE

Genus of evergreen, woody-stemmed, twining climbers. Dislikes strong winds and strong sun. Prefers moist but well drained, preferably non-alkaline soil. Cut out dead growth in spring; train to required shape. Propagate by seed in spring or by stem cuttings or layering in fall.

B. corallina (Coral plant) illus. p.202.

BERBERIS

Barberry

BERBERIDACEAE

Genus of deciduous or evergreen, spiny shrubs, grown mainly for their rounded to cup-shaped flowers and fruits. Evergreens are also grown for their leaves; deciduous shrubs for their colorful fall foliage. Needs sun or semishade and any but water-logged soil. Propagate species by seed in fall, deciduous hybrids and cultivars by softwood or semiripe cuttings in summer, evergreen hybrids and cultivars by semiripe cuttings in summer. ① All parts may cause mild stomach upset if ingested; contact with the spines may irritate skin.

B. aggregata. Deciduous, compact shrub. H 5ft (1.5m), S 6ft (2m). Oblong to ovate, olive-green leaves are blue-green beneath, turning red in fall. Bears dense clusters of pale yellow flower in late spring or early summer, followed by egg-shaped, white-bloomed, red fruit. Z6–9

B. buxifolia of gardens. See *B. microphylla*.

B. calliantha. Evergreen, compact shrub. H 30in (75cm), S 36in (90cm). Hollylike, elliptic to oblong, spine-toothed leaves are glossy, dark green above, waxy-white beneath. Pale yellow flowers are borne singly, sometimes in twos or threes, in late spring, followed by egg-shaped, black fruit with a blue-white bloom. Z7–9

B. candidula. Evergreen, dense, mound-forming shrub. H 2ft (60cm), S 4ft (1.2m). Elliptic to ovate leaves are glossy, dark green, waxy white beneath, with inrolled margins. Bears solitary, bright yellow flowers in late spring, then egg-shaped, purple fruit with a white bloom. Z6–9

***B.* x *carminea* 'Barbarossa'** illus. p.141. **'Pirate King'** is a deciduous, arching shrub. H 6ft (2m), S 10ft (3m). Has oblong, dark green leaves, and in late spring and early summer, clusters of yellow flowers, followed by spherical, bright red fruit. Z6–9

B.* x *chenaultii. See *B.* x *hybridogagnepainii* 'Chenault'.

B. coxii. Vigorous, dense, evergreen shrub. H 6ft (2m), S 10ft (3m). Produces elliptic to ovate, glossy, spine-toothed, dark green leaves, intensely white-bloomed beneath. In late spring, bears clusters of 3–6 pale yellow flowers, followed by egg-shaped, black fruit with a blue-gray bloom. Z6–9

B. darwinii (Darwin's barberry) illus. p.111.

B. empetrifolia illus. p.148.

***B.* x *frikartii* 'Amstelveen'.** Vigorous, evergreen shrub. H 3ft (1m), S 5ft (1.5m). Has arching shoots and lance-shaped, glossy leaves, dark green above, gray-white beneath. Yellow flowers are borne in late spring, followed by egg-shaped, black fruit with a blue-gray bloom. Z6–10

B. gagnepainii* var. *lanceifolia illus. p.127.

***B.* 'Georgei'.** Spreading, deciduous shrub. H 8ft (2.5m), S 6ft (2m). Has elliptic-obovate, toothed, mid-green leaves that turn orange-red in fall. Yellow flowers are borne in pendent, red-stalked racemes in late spring, followed by a vivid display of oblong, red fruit. Z5–9

***B.* x *hybridogagnepainii* 'Chenault'**, syn. *B.* x *chenaultii*. Evergreen, spreading, dense shrub. H 5ft (1.5m), S 6ft (2m). Lance-shaped, wavy-margined, spine-toothed leaves are glossy, dark green above, white-bloomed beneath, often turning bronze in winter. Bears golden-yellow flowers in late spring and early summer, followed by egg-shaped, blue-black fruit. Z6–9

B. jamesiana. Vigorous, upright, deciduous shrub. H 6ft (2m), S 5ft (1.5m). Ovate, entire to finely toothed leaves are olive-green, gray-bloomed beneath, and turn red in fall. Bears pendent racemes of yellow flowers in early summer, followed by spherical, coral-red fruits. Z7–9

B. julianae. Dense, upright, evergreen shrub. H and S 10ft (3m). Has rigid, glossy, dark green leaves, pale green beneath, with strongly spined margins. In late spring, bears clusters of up to 20 yellow or red-tinged flowers, followed by oblong, black fruit with a white bloom. Z6–9

***B. linearifolia* 'Orange King'.** See *B. trigona* 'Orange King'.

B.* x *lologensis. Vigorous, evergreen, spreading shrub with arching shoots. H and S 12ft (4m). Has spoon-shaped, spine-toothed, glossy, dark green leaves. Profuse clusters of 8–12 rich orange flowers are borne from mid- to late spring, followed by spherical, blue-black fruits. Z6–9. **'Stapehill'** illus. p.127.

***B.* x *media* 'Parkjuweel'**, syn. *B.* 'Park Jewel', *B.* 'Parkjuweel'. Semievergreen, small, dense, thorny, rounded shrub. H 6ft (2m), S 8ft (2.5m). Entire or slightly toothed, broadly elliptic leaves are glossy, bright green, changing to rich orange and red in fall. Solitary or small clusters of pale yellow flowers are borne in spring; fruit is rarely produced. Z6–9. **'Red Jewel'** (syn. *B.* 'Red Jewel') has leaves emerging glossy brown-red, deepening to purplish brown, turning dark bronze-green by late summer.

B. microphylla, syn. *B. buxifolia* of gardens. Upright, evergreen or semi-evergreen arching shrub. H 8ft (2.5m), S 10ft (3m). Has elliptic, spine-tipped, leathery, dark green leaves. In mid- and late spring, bears dark orange-yellow flowers, then spherical, dark purple fruit. Z5–9

***B.* x *ottawensis* 'Purpurea'.** See *B.* x *o.* f. *purpurea* 'Superba'. **f. *purpurea* 'Superba'** (syn. *B.* x *o.* 'Purpurea') is a deciduous, arching shrub. H and S 8ft (2.5m). Has rounded to ovate, red-purple leaves that turn crimson in fall. Small, red-tinged, yellow flowers in late spring are followed by egg-shaped, red fruit. Z4–8

***B.* 'Park Jewel'.** See *B.* x *media* 'Parkjuweel'.

***B.* 'Parkjuweel'.** See *B.* x *media* 'Parkjuweel'.

B. polyantha of gardens. See *B. prattii*.

B. prattii, syn. *B. polyantha* of gardens. Deciduous shrub with arching branches. H and S 10ft (3m). Densely clustered, oblong leaves are glossy, mid-green above, gray beneath. Large, upright panicles of small, yellow flowers in summer are followed by long-lasting, spherical, bright pink fruit. Z6–9

***B.* 'Red Jewel'.** See *B.* x *media* 'Red Jewel'.

B.* x *rubrostilla. See *B.* 'Rubrostilla'.

***B.* 'Rubrostilla'**, syn. *B.* x *rubrostilla*, illus. p.162.

B.* x *stenophylla cultivars illus. p.127. **'Corallina Compacta'** illus. p.336.

B. temolaica. Very distinctive, deciduous shrub. H 6ft (2m), S 10ft (3m). Has arching stems, white-bloomed at first, later purple, and oblong, gray-green leaves. Solitary, pale yellow flowers are produced in late spring, followed by egg-shaped, red fruit with a white bloom. Z6–10

B. thunbergii. Deciduous, dense, rounded shrub. H 3ft (1m), S 8ft (2.5m). Broadly obovate, entire leaves are fresh green above, bluish-green beneath, turning orange and red in fall. Bears small clusters of red-tinged, pale yellow flowers along the branches in midspring, followed by egg-shaped, glossy, red fruit. Z5–8.

f. *atropurpurea* illus. p.123.

f. *atropurpurea* 'Admiration', H and S 12–18in (30–40cm), is a compact, dwarf form, which has rich red foliage with narrow greenish-yellow margins.

f. *atropurpurea* 'Concorde' is dwarf and globe-shaped, with deep purple leaves that turn scarlet in fall, and small, red fruit.

f. *atropurpurea* 'Dart's Red Lady' has dark red-purple foliage, turning bright red in fall. **f. *atropurpurea* 'Harlequin'** is compact and upright, with small purple leaves, mottled creamy-white and gray.

f. *atropurpurea* 'Maria' is columnar with golden leaves. **'Atropurpurea Nana'** (syn. *B.t.* 'Crimson Pygmy'), H and S 2ft (60cm), bears reddish-purple foliage. **'Aurea'** illus. p.160. **'Crimson Pygmy'** see *B.t.* 'Atropurpurea Nana'. **'Erecta'** has upright branches that spread with age. **'Golden Ring'** has purple leaves narrowly margined with golden-yellow, turning red in fall, and produces red fruit. **'Rose Glow'** illus. p.137.

***B. trigona* 'Orange King'** illus. p.127.

B. valdiviana illus. p.111.

B. verruculosa. Compact, evergreen shrub with arching shoots. H and S 5ft (1.5m). Glossy, obovate to elliptic, spine-tipped leaves are glossy, dark green above, gray-white beneath. Bears solitary, golden yellow flowers in late spring, followed by egg-shaped, dark purple fruit with a white bloom. Z6–9

B. wilsoniae. Semievergreen, dense, mound-forming, very spiny shrub with spreading, arching branches. H 3ft (1m), S 6ft (2m). Narrowly oblong, usually entire, gray-green leaves turn red and orange in fall. In late spring and early summer, bears clusters of pale yellow flowers, followed by spherical, translucent, coral-pink to pinkish-red fruit. Z6–9

BERCHEMIA

RHAMNACEAE

Genus of deciduous, twining climbers, grown for their leaves and fruit. Useful for covering walls, fences and tree stumps. Grow in sun or shade, in any well-drained soil. Propagate by seed in fall or spring, by semiripe cuttings in summer, or by layering or root cuttings in winter.

***B. racemosa* 'Variegata'.** Deciduous, twining climber. H 15ft (5m) or more. Has heart-shaped, green leaves, 1¼–3in (3–8cm) long and paler beneath, that are variegated creamy-white. Small, bell-shaped, greenish-white flowers, borne in summer, are followed by rounded, green fruits that turn red, then black. Z6–9

BERGENIA

SYN. MEGASEA

SAXIFRAGACEAE

Genus of evergreen perennials with thick, usually large, rounded to ovate or spoon-shaped, leathery leaves, with indented veins, that make ideal groundcover. Tolerates sun or shade and any well-drained soil, but leaf color is best on poor soil and in full sun. Propagate by division in spring after flowering.

***B.* 'Abendglut'**, syn. *B.* 'Evening Glow'. Evergreen, clump-forming perennial. H 9in (23cm), S 12in (30cm). Bears rosettes of ovate, crinkled, short-stemmed, maroon leaves, from which arise racemes of open cup-shaped, semidouble, deep magenta flowers in spring. Z6–9

***B.* 'Ballawley'.** Evergreen, clump-forming perennial. H and S 2ft (60cm). Large, rounded to ovate, flat, deep green leaves turn red in winter. In spring, bears racemes of cup-shaped, bright crimson flowers on red stems. Shelter from cold winds. Z6–9

B. beesiana. See *B. purpurascens*.

***B.* 'Beethoven'** illus. p.256.

B. ciliata illus. p.256.

B. cordifolia. Evergreen, clump-forming perennial. H 1½ft (45cm), S 2ft (60cm). Leaves are rounded, puckered and crinkle-edged. Produces racemes of open cup-shaped, light pink flowers in spring. Z3–8. **'Purpurea'** H and S 20in (50cm). Has large, rounded, purple-tinged, deep green leaves. Clusters of bell-shaped, rose-pink flowers are borne on red stems from late winter to early spring.

B. crassifolia. Evergreen, clump-forming perennial. H 1ft (30cm), S 1½ft (45cm). Has ovate- or spoon-shaped, fleshy, flat leaves that turn mahogany in winter. Bears spikes of open cup-shaped, lavender-pink flowers in spring. Z3–8

***B.* 'Eric Smith'.** Evergreen,ground-cover perennial. H 16in (40cm),

S 2ft (60cm) or more. Has large, rounded, rather upright, leathery, mid-green leaves, which are tinted red in winter. Bears rich pink flowers on sturdy stalks in spring. Z4–8
***B.* 'Evening Glow.'** See *B.* 'Abendglut'.
***B.* 'Morgenröte'**, syn. *B.* 'Morning Red'. Evergreen, clump-forming perennial. H 1½ft (45cm), S 1ft (30cm). Leaves are rounded, crinkled and deep green. Spikes of open cup-shaped, deep carmine flowers in spring are often followed by a second crop in summer. Z4–9
***B.* 'Morning Red'.** See *B.* 'Morgenröte'.
B. purpurascens, syn. *B. beesiana* illus. p.280.
***B.* x *schmidtii*.** Evergreen, clump-forming perennial. H 1ft (30cm), S 2ft (60cm). Ovate, flat leaves have toothed margins. Sprays of open cup-shaped, soft pink flowers are borne in early spring on short stems. Z4–8
***B.* 'Silberlicht'**, syn. *B.* 'Silver Light', illus. p.255.
***B.* 'Silver Light'.** See *B.* 'Silberlicht'.
***B. stracheyi*.** Evergreen, clump-forming perennial. H 9in (23cm), S 12in (30cm). Small, rounded, flat leaves form neat rosettes, among which nestle heads of open cup-shaped, white or pink flowers in spring. Z4–8
***B.* 'Sunningdale'.** Evergreen, clump-forming perennial. H 12–18in (30–45cm), S 18–24in (45–60cm). Rounded, slightly crinkled, deep green leaves are mahogany beneath. Bears racemes of open cup-shaped, lilac-carmine flowers on red stalks in spring. Z3–8

BERKHEYA

ASTERACEAE/COMPOSITAE

Genus of summer-flowering perennials. Where marginally hardy, most species should be grown against a south- or west-facing wall. Needs full sun and fertile, well-drained soil. Sow seed in fall or divide in spring.
B. macrocephala illus. p.243.
B. purpurea illus. p.269. **'Silver Spike'** is a rosette-forming, evergreen perennial. H and S 16–30in (40–75cm). Basal leaves are oblong-lance-shaped, spiny and silvery-gray. Bears large, daisylike, pale whitish-purple flower heads in summer. Z9–10

BERTOLONIA

MELASTOMATACEAE

Genus of evergreen perennials, grown for their foliage. Requires a fairly shaded position and high humidity, although soil should not be waterlogged. Propagate by tip or leaf cuttings in spring or summer.
***B. marmorata*.** Evergreen, rosette-forming perennial. H 4–6in (10–15cm), S 10in (25cm) or more. Broadly ovate, slightly fleshy leaves have heart-shaped bases, silvery midribs, and puckered surfaces, and are reddish-purple below, velvety green above. Intermittently bears spikes of saucer-shaped, pinkish-purple flowers. Z14–15 (min. 61–66°F/16–19°C)

BESCHORNERIA

ASPARAGACEAE

Genus of perennial succulents with narrowly lance-shaped leaves forming erect, almost stemless, basal rosettes. Needs full sun and very well-drained soil. Propagate by seed or division in spring or summer.
B. yuccoides illus. p.490.

***Betonica officinalis*.** See *Stachys officinalis*.

BETULA

Birch

BETULACEAE

Genus of deciduous trees and shrubs, grown for their bark and fall color. Needs sun and moist but well-drained soil; some species prefer acidic soil. Transplant young trees in fall. Propagate by grafting in late winter or softwood cuttings in summer.
***B. albosinensis*.** See *B. utilis* subsp. *albosinensis*.
B. alleghaniensis, syn. *B. lutea* (Yellow birch). Deciduous, upright, open tree, often multi-stemmed. H 80ft (25m), S 30ft (10m). Smooth, glossy, golden-brown bark peels in thin shreds. Ovate, mid- to pale green leaves rapidly turn gold in fall. Bears yellow-green catkins in spring. Z4–7
B. costata of gardens. See *B. ermanii* 'Grayswood Hill'.
B. ermanii (illus. p.78). Deciduous, open-branched, elegant tree. H 70ft (20m), S 40ft (12m). Ovate, glossy, green leaves have excellent fall color. Peeling, pinkish-white bark is distinctively marked with large lenticels. Z5–8. **'Grayswood Hill'** (syn. *B. costata* of gardens) has pure white bark.
'Kwanak Weeping', H and S 10–12ft (3–4m), forms a small tree with an umbrella-shaped head and creamy-white bark. Z7–10
***B.* 'Fascination'.** Rounded to broadly spreading tree. H 30ft (10m), S 20ft (6m). Has smooth, orange-brown, peeling bark, becoming pinkish-white with age, and ovate, tapered, dull, mid-green leaves, turning yellow in fall. Bears yellow-brown male catkins in midspring. Z5–9
***B. gmelinii* 'Mount Apoi'.** Slow-growing, multi-stemmed tree, eventually forming a rounded shape. H and S 15–20ft (5–6m). Has peeling, creamy-white bark. Good for small gardens. Z7–10
***B. jacquemontii*.** See *B. utilis* subsp. *jacquemontii*.
***B.* 'Jermyns'.** See *B. utilis* subsp. *jacquemontii* 'Jermyns'.
B. lenta (Cherry birch) illus. p.79.
***B. lutea*.** See *B. alleghaniensis*.
B. maximowicziana (Monarch birch). Fast-growing, deciduous, broad-headed tree. H 80ft (25m), S 40ft (12m). Has orange-brown or pink bark, and bears racemes of yellowish catkins in spring. Large, ovate, mid-green leaves turn bright butter-yellow in fall. Z6–8
B. nigra (River birch; illus. p.78). Deciduous, conical then spreading tree, with peeling, pink-orange bark, becoming fissured with age. H 60ft (18m), S 40ft (12m). Diamond-shaped, glossy, mid-green leaves turn golden-orange in fall. Yellow male catkins develop in spring. Can be coppiced to encourage multiple, brightly colored stems. Grows well in damp soil. Z4–9
B. papyrifera (Canoe birch, Paper birch) illus. p.67.
B. pendula (Silver birch). Deciduous, broadly columnar or conical, graceful tree. H 80ft (25m) or more, S 30ft (10m). Has slender, drooping shoots and silver-white bark, becoming black and rugged at base of trunk with age. In spring, bears yellow-brown catkins. Ovate, bright green leaves turn yellow in fall. Z2–7. **'Dalecarlica'** of gardens see *B.p.* 'Laciniata'.
'Laciniata' (syn. *B.p.* 'Dalecarlica' of gardens) has pendulous branchlets and deeply cut leaves. **subsp. szechuanica** (syn. *B. platyphylla* var. *szechuanica*) has chalk-white bark when mature, and leathery, dark blueish-green leaves. Bears yellow-green male catkins in early spring.
'Tristis' (Weeping birch) illus. p.68.
'Youngii' (Young's weeping birch) illus. p.88.
***B. platyphylla* var. *szechuanica*.** See *B. pendula* subsp. *szechuanica*.
B. utilis (Himalayan birch). Deciduous, upright, open tree. H 60ft (18m), S 30ft (10m). Paper-thin, peeling bark varies from creamy-white to dark copper-brown. Yellow-brown catkins are borne in spring. Ovate, mid-green leaves, hairy beneath when young, turn golden-yellow in fall. Z5–7. **subsp. *albosinensis***
(syn. *B. albosinensis*; White Chinese birch; illus. p.78) has serrated, pale green leaves and peeling, honey-colored or reddish-maroon bark with a gray bloom. **subsp. *albosinensis* 'Bowling Green'** has rich chestnut, peeling bark, revealing a paler layer beneath, and showy catkins in spring. **subsp. *albosinensis* 'China Ruby'** has creamy white bark on young branches, with grayish-pink undertones that mature to copper-red. **subsp. *albosinensis* 'Kansu'** is upright and vigorous, with orange-brown peeling bark and butter-yellow fall leaves.
subsp. *albosinensis* 'Red Panda' has striking copper-red bark. **subsp. *jacquemontii*** (syn. *B. jacquemontii, B.u.* var. *jacquemontii*) has bright white bark and ovate, serrated, mid-green leaves that turn clear yellow in fall. **subsp. *jacquemontii* 'Doorenbos'** has snowy white, peeling bark, even on smaller branches. **subsp. *jacquemontii* 'Grayswood Ghost'** (illus. p.78) has bright, white bark, slightly pendent branchlets and dark green leaves.
subsp. *jacquemonti* 'Jermyns' (syn. *B.* 'Jermyns'; illus. p.78), H 50ft (15m), S 30ft (10m), has bright white bark and very long, elegant, yellow, male catkins. **subsp. *jacquemontii* 'Silver Shadow'** has bright white bark and pendent, dark green leaves. **var. *jacquemontii*** see *B.u.* subsp. *jacquemontii*. **var. *utilis* 'Buddha'** has pinkish-brown bark, thinly washed with white, and with contrasting warm brown peeling bark. **var. *utilis* 'Forest Blush'** has creamy white bark with a hint of pink, and prominent orange-brown lenticels.
var. *utilis* Wakehurst Place Chocolate' has chocolate-colored bark.

BIDENS

ASTERACEAE/COMPOSITAE

Large genus of annuals, perennials and deciduous shrubs; a few perennials are treated as annuals and grown as hanging basket and container plants for their finely dissected leaves and large, yellow flowers. Propagate by seed sown in spring or divide perennials when growth begins in spring.
***B. atrosanguinea*.** See *Cosmos atrosanguineus*.
***B. ferulifolia*.** Short-lived perennial with small, finely divided, bright green leaves. H to 12in (30cm), S indefinite. Slender, spreading stems produce daisylike, golden-yellow flower heads, 1¼–1½in (3–4cm) across, from midsummer to fall. Z8–11. **'Golden Glory'** is compact, free-flowering and excellent in a hanging basket. **Pirates Series** cultivars have single, semidouble or double, pearl-white, creamy yellow, or yellow flowers.

BIGNONIA

BIGNONIACEAE

Genus of one species of evergreen, tendril climber. In cold regions, may lose its leaves in winter. Needs a position in sun and fertile soil to flower well. If necessary, prune in spring. Propagate by seed in spring or by layering in fall or spring.
***B. capensis*.** See *Tecoma capensis*.
B. capreolata, syn. *Doxantha capreolata* (Cross vine, Trumpet flower). Evergreen, tendril climber. H 30ft (10m) or more. Each leaf has 2 narrowly oblong leaflets and a branched tendril. In summer, produces clusters of funnel-shaped, reddish-orange flowers in leaf axils. Pea-pod-shaped fruits, to 6in (15cm) long, are borne in fall. Z6–9
***B. grandiflora*.** See *Campsis grandiflora*.
***B. jasminoides*.** See *Pandorea jasminoides*.
***B. pandorana*.** See *Pandorea pandorana*.
***B. radicans*.** See *Campsis radicans*.
***B. stans*.** See *Tecoma stans*.

***Bilderdykia*.** See *Fallopia*.

BILLARDIERA

PITTOSPORACEAE

Genus of evergreen, woody-stemmed, twining climbers, grown mainly for their attractively colored fruits. Grow in any well-drained soil, in a sheltered position and partial shade. Propagate by seed in spring or stem cuttings in summer or fall.
B. longiflora illus. p.210.

BILLBERGIA

BROMELIACEAE

Genus of evergreen, rosette-forming perennials, grown for colorful but short-lived flowers and attractive foliage. Needs semishade and well-drained soil, ideally adding sphagnum moss or plastic chips used for orchid culture. Water moderately when in full growth, sparingly at other times. Propagate by seed at 81°F (27°C) as soon as ripe, or root offsets in summer.
B. nutans (Queen's tears). Evergreen, clump-forming, tubular-rosetted perennial. H 20in (50cm), S indefinite. Strap-shaped leaves are usually dark green. In summer, pendent clusters of tubular, purple-blue-edged, lime-green flowers emerge from pink bracts. Z9–11
***B. rhodocyanea*.** See *Aechmea fasciata*.
B.* x *windii (Angel's tears). Evergreen, clump-forming, tubular-rosetted perennial. H 20in (50cm), S 10in (25cm) or more.

Similar to *B. nutans*, but produces broader, spreading, gray-green leaves and larger bracts. Tubular, green flowers, with purple tips and red margins, are borne in summer. Z9–15 27°C

Biota orientalis. See *Platycladus orientalis*.
Bistorta. See *Persicaria*.

BLECHNUM

BLECHNACEAE

Genus of evergreen or semievergree ferns. Most species prefer semishade. Needs moist, neutral to acidic soil. Remove fading fronds regularly. Propagate *B. penna-marina* and *B. spicant* by division in spring, other species by spores in late summer.
B. alpinum. See *B. penna-marina* subsp. *alpinum*.
***B. brasiliense* 'Volcano'.** Evergreen, shuttlecock-shaped fern that eventually forms a small trunk. H 2–3ft (60–90cm), S 2ft (60cm). Has broadly lance-shaped fronds, deeply divided into narrow pinnae. New fronds emerging from the center are vivid red, maturing to dark green. Z6–10
B. chilense, syn. *B. tabulare* of gardens, illus. p.292.
B. penna-marina illus. p.290. **subsp. *alpinum*** (syn. *B. alpinum*) is an evergreen fern with creeping rhizomes. H 4–6in (10–15cm), S indefinite. Has tufts of linear, pinnate or pinnatifid, matte, dark green fronds, which are reddish green when young. Z10–11
B. spicant (Hard fern). Evergreen fern. H 8–20in (20–50cm), S 2ft (60cm) or more. Bears narrowly lance-shaped, deeply divided, ladderlike, leathery, spreading, dark green fronds. Prefers shade and peaty or leafy soil. Z10–11
B. tabulare of gardens. See *B. chilense*.

BLETILLA

ORCHIDACEAE

See also ORCHIDS.
B. hyacinthina. See *B. striata*.
B. striata, syn. *B. hyacinthina* (illus. p.466). Deciduous, terrestrial orchid. H and S 12–24in (30–60cm). In late spring or early summer, bears magenta or white flowers, 1¼in (3cm) long, and broadly lance-shaped leaves, 20in (50cm) long. Needs shade in summer. Z5–8

Bocconia cordata. See *Macleaya cordata*.

BOENNINGHAUSENIA

RUTACEAE

Genus of deciduous subshrubs, usually with soft, herbaceous stems, grown for their foliage and flowers. Cut to ground level in winter. Needs full sun and fertile, well-drained but not too dry soil. Propagate by softwood cuttings in summer or by seed in fall.
B. albiflora. Deciduous, bushy subshrub. H and S 3ft (1m). Has pungent, dark green leaves, divided into ovate leaflets. Bears loose panicles of small, cup-shaped, white flowers in late summer. Z6–10

BOLAX

APIACEAE/UMBELLIFERAE

Genus of evergreen, hummock- and cushion-forming perennials, often included in *Azorella*. Grown for its symmetrical rosettes of small, thick, tough leaves. Flowers only rarely in cultivation. Suitable for growing in gritty screes, troughs, and alpine houses. Needs sun and humus-rich, well-drained soil. Propagate by rooting rosettes in spring.
B. gummifer illus. p.376.

BOMAREA

ALSTROEMERIACEAE

Genus of tuberous-rooted, usually deciduous, scrambling and twining climbers, grown for their flowers. Grow in well-drained soil in full light. Water regularly in growth, sparingly when dormant. Provide support. Some species grow well planted beneath shrubs through which they can climb; mulch to protect tubers before winter. Cut out old flowering stems at ground level when leaves yellow. Propagate by seed or division in early spring.
B. andimarcana, syn. *B. pubigera* of gardens. Deciduous, scrambling climber with straight, slender stems. H 6–10ft (2–3m). Has lance-shaped leaves, white and hairy beneath. Bears nodding, tubular, green-tipped, pale yellow flowers, suffused pink, in spring–fall. Z9–10
B. caldasii. See *B. multiflora*.
B. edulis illus. p.201.
B. kalbreyeri of gardens. See *B. multiflora*.
B. multiflora, syn. *B. caldasii, B. kalbreyeri* of gardens, illus. p.207.
B. pubigera of gardens. See *B. andimarcana*.
B. salsilla. Deciduous, herbaceous, twining climber. H to 6ft (2m), S 3ft (1m) or more. Ovate leaves are grayish-green. Bears open clusters of pendent, bell-shaped, green-tipped, cerise flowers in summer. Z9–11

BORAGO

Borage

BORAGINACEAE

Genus of annuals and perennials, grown for culinary use as well as for their flowers. Requires sun and fertile, well-drained soil. For culinary use, gather only young leaves. Propagate by seed sown outdoors in spring. Some species will self seed prolifically and may become invasive.
B. officinalis (Borage) illus. p.315. **f. *alba*** is a robust, freely branching annual. H 2ft (60cm), S 18in (45cm). Has lance-shaped to ovate, bristly, dull basal leaves and stalkless, lance-shaped stem leaves. Bears 5-petaled, star-shaped, white flowers all summer. Z6–10

BORONIA

RUTACEAE

Genus of evergreen shrubs, grown mainly for their flowers. Needs full light and sandy, neutral to acidic soil. Water potted plants moderately, less when not in full growth. For a compact habit, shorten long stems after flowering. Propagate by seed in spring or by semiripe cuttings in summer. Red spider mite may be a problem.
B. megastigma illus. p.456.

BOUGAINVILLEA

NYCTAGINACEAE

Genus of deciduous or evergreen, woody-stemmed, scrambling climbers, grown for their large clusters of small, tubular flowers, which have showy bracts. Grow in fertile, well-drained soil and in full light. In growing season, water moderately; keep pot plants almost dry when dormant. Tie to a support. Cut back previous season's lateral growths in spring, leaving ¾–1¼in (2–3cm) long spurs. Propagate by semiripe cuttings in summer or by hardwood cuttings when dormant. Whitefly and mealy bug may attack.
B.* x *buttiana. Vigorous, evergreen, woody-stemmed, scrambling climber. H 25–40ft (8–12m). Has ovate, mid-green leaves, to 3in (8cm) long, lighter below. Bears large clusters of strongly waved, golden-yellow, purple or red floral bracts from summer to fall. Z13–15. **'California Gold'** see *B.* x *b.* 'Enid Lancaster'. **'Crimson Lake'** see *B.* x *b.* 'Mrs. Butt'. **'Enid Lancaster'** (syn. *B.* x *b.* 'California Gold', *B.* x *b.* 'Golden Glow') has orange-yellow floral bracts. **'Golden Glow'** see *B.* x *b.* 'Enid Lancaster'. **'Miss Manila'** (syn. *B.* 'Miss Manila', *B.* 'Tango') has pink floral bracts. **'Mrs. Butt'** (syn. *B.* x *b.* 'Crimson Lake') has crimson-magenta bracts. **'Scarlet Queen'** has scarlet bracts.
***B.* 'Dania'.** Vigorous, mainly evergreen, woody-stemmed, scrambling climber. H to 15ft (5m). Has rounded-ovate, mid-green leaves; bears clusters of deep pink floral bracts in summer. Z12–15
B. glabra illus. p.462. **'Sanderiana'** illus. p.462. **'Snow White'** illus. p.460.
***B.* 'Miss Manila'.** See *B.* x *buttiana* 'Miss Manila'
B. spectabilis. Strong-growing, mainly evergreen, woody-stemmed, scrambling climber; stems usually have a few spines. H 22–40ft (7–12m). Has elliptic to ovate leaves and, in summer, large trusses of red-purple floral bracts. Z9–11
***B.* 'Tango'.** See *B.* x *buttiana* 'Miss Manila'.

Boussingaultia baselloides of gardens. See *Anredera cordifolia*.

BOUTELOUA

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
B. gracilis, syn. *B. oligostachya* (Blue grama, Mosquito grass). Semievergreen, tuft-forming, narrow-leaved, perennial grass. H to 2ft (60cm), S 1ft (30cm). Comblike flower spikes, 1½in (4cm) long, are held at right-angles to stems in summer. Z5–9
B. oligostachya. See *B. gracilis*.

BOUVARDIA

RUBIACEAE

Genus of evergreen shrubs and perennials, grown for their flowers. Prefers full light and fertile, well-drained soil. Water freely when in full growth, and moderately at other times. Cut back stems by half to three-quarters after flowering. Propagate by softwood cuttings in spring or by greenwood or semiripe cuttings in summer. Whitefly and mealy bug may be troublesome.
B. humboldtii. See *B. longiflora*.
B. longiflora, syn. *B. humboldtii*. Erect to spreading shrub. H 3ft (1m), S 2ft (60cm). Has lance-shaped leaves and bears terminal clusters of fragrant, white flowers, with slender tubes and 4 petal lobes, from summer to early winter. Z13–15 (min. 41°F/5°C)
B. ternifolia, syn. *B. triphylla* (Scarlet trompetilla), illus. p.456.
B. triphylla. See *B. ternifolia*.

BOWIEA

ASPARAGACEAE

Genus of summer-flowering, bulbous, perennial succulents with scrambling, branched, green stems that produce no proper leaves. Needs sun and well-drained soil; plant with half of bulb above soil level. Support with sticks or canes. Propagate by seed sown under glass in winter or spring. May produce offsets.
B. volubilis. Bulbous summer-flowering succulent. H 12ft (4m), S indefinite. Has climbing, much-branched, slender stems and no proper leaves. Produces small, star-shaped, green flowers at tips of stems. Provide support. Z14–15 (min. 55°F/13°C)

BOYKINIA

SAXIFRAGACEAE

Genus of mound-forming perennials, grown for their foliage, sometimes bronze-tinted when young, and their flowers. Good for a wild or woodland garden. Most species require shade and humus-rich, moist but well-drained, acidic soil. Propagate by division in spring or by seed in fall.
B. aconitifolia. Mound-forming perennial. H 6–24in (15–60cm), S 12in (30cm). Rounded to kidney-shaped, broadly toothed leaves are glandular-hairy. In summer, flower stems bear very small, bell-shaped, white flowers with yellowish-white centers. Z5–9
B. jamesii, syn. *Telesonix jamesii*. Mound-forming, rhizomatous perennial. H and S 6in (15cm). Each woody stem has a rosette of kidney-shaped, glandular-hairy leaves with lacerated edges. In mid- and late spring, produces open bell-shaped, frilled, pink flowers with green centers. Z5–9
Brachychilum. See *Hedychium*.

BRACHYCHITON

MALVACEAE/STERCULIACEAE

Genus of evergreen or deciduous, mainly spring-and summer-flowering trees, grown for their flowers and overall appearance. Needs full light and humus-rich, well-drained, preferably acidic soil. Water containerized plants moderately, much less in winter. Prune if needed. Propagate by seed in spring. Red spider mite may be a nuisance.
B. acerifolius, syn. *Sterculia acerifolia*, (Illawarra flame tree), illus. p.450.
B. populneus, syn. *Sterculia diversifolia* (Kurrajong). Evergreen, conical tree, pyramidal when young. H 20–70ft (6–20m), S 10–20ft (3–6m). Pointed or 3–5 lobed,

glossy, deep green leaves are chartreuse when young. In spring–summer, bears panicles of saucer-shaped, cream or greenish-white flowers with red, purple or yellow throats. Z9–11 (min. 50°F/10°C)

BRACHYGLOTTIS

ASTERACEAE/COMPOSITAE

Genus of evergreen shrubs and trees, herbaceous perennials, and climbers, grown for their bold foliage and daisylike flower heads. Grow in well-drained soil in full sun. Water potted plants freely in summer, moderately at all other times. Propagate by semiripe cuttings in late summer.

B. compacta, syn. *Senecio compactus*. Evergreen, bushy, dense shrub. H 3ft (1m), S 6ft (2m). Bears small, ovate, white-edged, dark green leaves, white below, and daisy-like, bright yellow flowers in clustered heads from mid- to late summer. Feltlike, white hairs cover the shoots. Z9–10

***B.* Dunedin Group**, syn. *Senecio* Dunedin Hybrids, *S. greyi* of gardens, *S. laxifolius* of gardens. Evergreen, bushy, mound-forming shrubs. H 5ft (1.5m), S 6ft (2m). Obovate to elliptic, often wavy-margined, mid- to dark green leaves, are white-hairy at first, then hairless. Loose clusters of daisylike, yellow flower heads are borne from summer to fall. Z9–10. **'Sunshine'** illus. p.161.

B. laxifolia, syn. *Senecio laxifolius*. Evergreen, bushy, spreading shrub. H 3ft (1m), S 6ft (2m). Ovate, gray-white leaves become dark green. Bears large clusters of daisylike, golden-yellow flower heads in summer. Z8–10

B. monroi, syn. *Senecio monroi*, illus. p.161.

B. repanda (Pukapuka, Rangiora). Evergreen, bushy shrub or tree. H 10ft (3m), S 10ft (3m) or more. Upright when young, with robust, downy, white stems and veined leaves, that are white beneath. Bears fragrant, white flower heads in summer. Z12–15

B. rotundifolia, syn. *Senecio reinoldii*, *S. rotundifolius*. Evergreen, rounded, dense shrub. H and S 3ft (1m). Produces rounded, leathery, glossy leaves, dark green above, white-felted below, and tiny, yellow flower heads from early to midsummer. In mild coastal areas will withstand salt winds. Z9–10

***B.* Walberton's Silver Dormouse ('Walbrach').** Evergreen, compact, bushy shrub. H 3ft (90cm), S 4ft (1.2m). Has ovate, hairy, silvery-gray, white-edged leaves, white beneath. A profusion of yellow flower heads with conspicuous ray-florets are borne in loose panicles, to 5in (12cm) across, in summer. Z6–10

BRACHYSCOME

ASTERACEAE/COMPOSITAE

Genus of annuals and perennials, grown for their daisylike flower heads and very variable, often finely divided foliage. Requires sun, a sheltered position, and rich, well-drained soil. Pinch out growing shoots of young plants to encourage a bushy habit. Propagate by seed sown under glass in spring or outdoors in late spring.

B. iberidifolia (Swan River daisy). Moderately fast-growing, thin-stemmed, bushy annual. H to 18in (45cm), S 14in (35cm). Has deeply cut leaves and small, fragrant, daisylike flowers, usually blue but also pink, mauve, purple or white, in summer and early fall. Z10–11. **Bravo Series** has white, blue or violet flower heads with black centers. **'Little Missy'** is compact, and bears lilac-blue flower heads with yellow centers.

Bracteantha. See *Xerochrysum*.

BRASILIOPUNTIA

CACTACEAE

Genus of one species of treelike perennial cactus, related to *Opuntia*. Eventually flowers and fruits when mature. Where marginally hardy, protect from frost and keep dry in winter. Needs full sun and well-drained soil. Propagate by seed or root stem segments in spring or summer.

B. brasiliensis, syn. *Opuntia brasiliensis*. Treelike, perennial cactus. H 18ft (5.5m), S 10ft (3m). Has a cylindrical, green stem bearing bright green branches of flattened, ovate, spiny segments. Sheds 2–3-year-old side branches. Abundant shallowly saucer-shaped, yellow flowers, 1½in (4cm) across, are borne in spring–summer on plants over 2ft (60cm) tall, followed by small, yellow fruits. Z8–11 (min. 37–41°F/3–5°C)

Brasiliorchis. See *Maxillaria*.

Brassaia. See *Schefflera*.

BRASSAVOLA

ORCHIDACEAE

See also ORCHIDS.

B. nodosa (Lady-of-the-night; illus. p.466). Evergreen, epiphytic orchid for an intermediate greenhouse. H and S 7in (18cm). Narrow-petaled, pale green flowers, 2in (5cm) across and each with a white lip, are borne, 1–3 to a stem, in spring; they are fragrant at night. Leaves, 7in (18cm) long, are thick and cylindrical. Best grown on a bark slab. Provide good light in summer. Z11–12 (min. 55°F/13°C, max. 86°F/30°C)

BRASSIA

ORCHIDACEAE

See also ORCHIDS.

B. aurantiaca, syn. *Ada aurantiaca* (illus. p.467). Evergreen, epiphytic orchid for a cool greenhouse. H 9in (23cm). Bears sprays of tubular, orange flowers, 1in (25cm) long, in early spring. Has narrowly ovate leaves, 4in (10cm) long. Needs shade in summer. Z9–11 (min. 50°F/10°C)

BRASSICA

BRASSICACEAE/CRUCIFERAE

Genus of annuals and evergreen biennials and perennials. Most are edible vegetables (such as cabbages and kales), but forms of *B. oleracea* are grown for their ornamental foliage. Grow in sun and fertile, well-drained soil. Lime-rich soil is preferable, but not essential. Propagate by seed sown outdoors in spring or under glass in early spring. Prone to club root.

***B. oleracea* cultivars** (Ornamental cabbage). Moderately fast-growing, evergreen, rounded biennial, grown as an annual. H and S 1–1½ft (30–45cm). Has heads of large, often crinkled leaves, in combinations of red/green, white/pink, pink/green. Do not allow to flower. Z7–11. **Northern Lights Series** illus. p.306.

***x Brassocattleya* x *B.* Mount Adams.** See x *Rhyncholaeliocattleya* Mount Adams.

***x Brassolaeliocattleya* Hetherington Horace 'Coronation'.** See x *Rhyncholaeliocattleya* Hetherington Horace 'Coronation'.

***x Brassolaeliocattleya* St Helier.** See x *Rhyncholaeliocattleya* St Helier.

Bravoa geminiflora. See *Polianthes geminiflora*.

BREYNIA

PHYLLANTHACEAE/EUPHORBIACEAE

Genus of evergreen shrubs and trees, grown for their foliage. Requires full light or partial shade, and fertile, well-drained soil. Water potted plants freely when in full growth, moderately at other times. Cut back large bushes hard after flowering. Propagate by greenwood or semiripe cuttings in summer. Whitefly, red spider mite and mealy bug may be troublesome.

B. disticha, syn. *B. nivosa*, *Phyllanthus nivosus* (Snow bush). Evergreen, well-branched shrub with slender stems. H 3ft (1m) or more, S 2–3ft (60–100cm). Leaves are green with white marbling. Tiny, greenish flowers, borne intermittently, have no petals. Z14–15. (min. 59°F/15°C) **'Roseopicta'** H and S to 3ft (1m). Has broadly ovate, green leaves variably bordered and splashed with white and flushed pink. Insignificant, petalless flowers are borne in spring–summer.

B. nivosa. See *B. disticha*.

Bridgesia spicata. See *Ercilla volubilis*.

BRIGGSIA

GESNERIACEAE

Genus of evergreen perennials, grown for their rosettes of hairy leaves. Needs shade and peaty soil, with plenty of moisture in summer, and good air circulation in winter. Protect against damp in winter. Propagate by seed in spring.

B. muscicola. Evergreen, basal-rosetted perennial. H 2–3in (5–8cm), S to 6in (15cm). Leaves are ovate, silver-haired and pale green. Arching flower stems bear loose clusters of tubular, pale yellow flowers, with protruding tips, in early summer. Best grown in an alpine house. Z12–15

BRIMEURA

ASPARAGACEAE

Genus of spring-flowering bulbs, similar to miniature bluebells, cultivated for their attractive flowers. Suitable for rock gardens and shrub borders. Requires partial shade and prefers humus-rich, well-drained soil. Propagate by seed in fall or by division in late summer.

B. amethystina, syn. *Hyacinthus amethystinus*, illus. p.419. **var. *alba*** is a bulbous perennial. H 4–8in (10–20cm), S 2in (5cm). Has linear, channelled, bright green leaves, 4–12in (10–30cm) long. Loose, slender racemes of tubular-bell-shaped, white flowers are produced in spring. Z5–9

Brittonastrum mexicanum. See *Agastache mexicana*.

BRIZA

Quaking grass

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.

B. maxima (Greater quaking grass). Robust, tuft-forming, annual grass. H 1½–2ft (45–60cm), S 10in (25cm). Mid-green leaves are mainly basal. Produces loose panicles of 7–20 pendent, purplish-green spikelets, in early summer, that dry particularly well for winter decoration. Self seeds readily. Z5–8

B. media (Common quaking grass). Evergreen, tuft-forming, rhizomatous, perennial grass. H 2–3ft (60–90cm), S 1ft (30cm). Mid-green leaves are mainly basal. In summer, produces open panicles of up to 30 pendent, purplish-brown spikelets that dry well for winter decoration. Z4–11

BRODIAEA

ASPARAGACEAE

Genus of mainly spring-flowering bulbs with colorful flowers produced in loose heads on leafless stems. Needs a sheltered, sunny situation and light, well-drained soil. Dies down in summer. Propagate in fall by seed or in late summer and fall by freely produced offsets.

B. californica. Early summer-flowering bulb. H 20in (50cm), S 3in (8cm). Bears large umbels of up to 12 widely funnel-shaped, violet, lilac, or pink flowers on long stalks. Z6–10

B. capitata. See *Dichelostemma capitatum*.

B. congesta. See *Dichelostemma congestum*.

B. coronaria, syn. *B. grandiflora*. Late spring- to early summer-flowering bulb. H 2–10in (5–25cm), S 2in (5cm). Long, narrow, semierect, basal leaves die down by flowering time. Leafless stems each carry a loose head of erect, funnel-shaped, violet-blue flowers on long, slender stalks. Z8–10

B. grandiflora. See *B. coronaria*.

B. hyacinthina. See *Triteleia hyacinthina*.

B. ida-maia. See *Dichelostemma ida-maia*.

B. ixioides. See *Triteleia ixioides*.

B. lactea. See *Triteleia hyacinthina*.

B. laxa. See *Triteleia laxa*. **'Queen Fabiola'** see *Triteleia laxa* 'Koningin Fabiola'.

B. lutea. See *Triteleia ixioides*.

B. peduncularis. See *Triteleia peduncularis*.

B. pulchella. See *Dichelostemma capitatum*.

BROMELIA

BROMELIACEAE

Genus of evergreen, rosette-forming perennials, grown for their overall appearance. Needs full light and well-drained soil. Water moderately in summer, sparingly at other times. Propagate by

seed as soon as ripe or divide in late spring or early summer.
B. balansae (Heart of flame) illus. p.470.

BROUSSONETIA

MORACEAE

Genus of deciduous trees and shrubs, grown for their foliage and unusual flowers. Male and female flowers are borne on different plants. Needs a position in full sun and well-drained soil. Propagate by softwood cuttings in summer or by seed in fall.
B. papyrifera (Paper mulberry) illus. p.74.

BROWALLIA

SOLANACEAE

Genus of shrubby perennials, mostly grown as annuals, with showy, open trumpet-shaped flowers. Grows best in sun or partial shade and in fertile, well-drained soil that should not dry out completely. Feed when flowering if container-grown and pinch out young shoots to encourage bushiness. Propagate by seed in spring; for winter flowers, sow in late summer.
B. americana, syn. *B. elata*. Moderately fast-growing, bushy perennial, usually grown as an annual. H and S to 2ft (60cm). Bears ovate, mid-green leaves and trumpet-shaped, blue flowers, 1½in (4cm) across, in summer. Z10–11 (min. 55–61°F/13–16°C)
B. elata. See *B. americana*.
B. speciosa (Bush violet) illus. p.472.

BROWNINGIA

SYN. AZUREOCEREUS

CACTACEAE

Genus of slow-growing, eventually treelike, perennial cacti. Spiny, silvery-or green-blue stems, with up to 20 or more ribs, are crowned by stiff, erect, green-blue branches. Requires full sun and very well-drained soil. Propagate by seed in spring or summer.
B. hertlingiana, syn. *Azureocereus hertlingianus*, illus. p.488.

Bruckenthalia spiculifolia. See *Erica spiculifolia*.

BRUGMANSIA

Angels' trumpets

SOLANACEAE

Genus of evergreen shrubs and trees, grown for their large, usually scented, flowers borne mainly in summer and fall. Prefers full light and fertile, well-drained soil. Water containerized specimens freely in full growth, moderately at other times. May be pruned hard in early spring. Propagate by seed sown in spring or by greenwood or semiripe cuttings in early summer or later. Whitefly and red spider mite may be a problem. ⓘ All parts are highly toxic if ingested.
B. arborea, syn. *B. versicolor* of gardens. Evergreen or semievergreen, rounded, robust shrub. H 6–12ft (2–4m), S 5–8ft (1.5–2.5m). Has narrowly ovate leaves, 6–12in (15–30cm) long. Strongly fragrant, pendent, trumpet-shaped, white flowers, 6–8in (16–20cm) long, with a spathelike calyx, are borne in summer–fall. Z11 (min. 45°F/7°C)
B. aurea. Evergreen, rounded shrub or tree. H 15–30ft (5–10m), S 6–12ft (2–4m). Has ovate leaves, 6in (15cm) long. In summer–fall, produces pendent, trumpet-shaped, white or yellow flowers, 6–10in (15–25cm) long. Z11 (min. 45°F/7°C)
B.* x *candida. Rounded shrub or small tree. H 10–15ft (3–5m), S 5–8ft (1.5–2.5m). Has downy, ovate leaves and strongly scented, pendulous, white flowers, that may be cream or pinkish, in summer–fall. Z11. (min. 45°F/7°C). **'Grand Marnier'** (syn. *B.* 'Grand Marnier') illus. p.319.
***B.* 'Grand Marnier'.** See *B.* x *candida* 'Grand Marnier'.
B. rosei of gardens. See *B. sanguinea*.
B. sanguinea, syn. *B. rosei* of gardens. Semievergreen, erect to rounded shrub or small tree. H 10–30ft (3–10m), S 6–10ft (2–3m). Has lobed, young leaves and large, trumpet-shaped, yellow and orange-red flowers from late summer to winter. Z11 (min. 45°F/7°C)
B. versicolor of gardens. See *B. arborea*.

BRUNFELSIA

SOLANACEAE

Genus of evergreen shrubs, grown for their flowers. In frost-prone climates, grow in a cool or temperate greenhouse. In frost-free climates, plant in a border. Needs semishade and humus-rich, well-drained soil. Water container plants moderately, much less in low temperatures. Remove stem tips to promote branching in growing season. Propagate by softwood cuttings in spring or summer. Mealy bug and whitefly may be a problem.
B. calycina. See *B. pauciflora*.
B. eximia. See *B. pauciflora*.
B. pauciflora, syn. *B. calycina*, *B. eximia* (Yesterday-today-and-tomorrow). Evergreen, spreading shrub. H 3–10ft (1–3m), S 18in–5ft (45cm–1.5m). Has oblong to lance-shaped, leathery, glossy leaves. Blue-purple flowers, each with a tubular base and 5 overlapping, wavy-edged petals, are borne from spring to summer. Z12–15 (min. 45°F/7°C).
'Macrantha' illus. p.457.

BRUNNERA

BORAGINACEAE

Genus of spring-flowering perennials. Prefers light shade and moist soil. Propagate by division in spring or by seed in fall
B. macrophylla (Siberian bugloss). Clump-forming perennial. H 1½ft (45cm), S 2ft (60cm). Delicate sprays of small, star-shaped, forget-me-notlike, bright blue flowers, borne in mid- to late spring, are followed by heart-shaped, rough, long-stalked leaves. Makes good groundcover. Z3–7. **'Hadspen Cream'** has irregular, creamy-white leaf margins. **'Jack Frost'** illus. p.261. **'Looking Glass'** is similar to 'Jack Frost', but with finer green leaf markings. **'Mister Morse'** has silver leaves, veined and edged with green and bears white flowers.

x *Brunsdonna.* See x *Amarygia*.

BRUNSVIGIA

AMARYLLIDACEAE

Genus of fall-flowering bulbs with heads of showy flowers. Requires sun and well-drained soil. Water in fall to encourage bulbs into growth and continue watering until summer, when leaves will die away and dormant bulbs should be kept fairly dry and warm. Propagate by seed sown in fall or by offsets in late summer.
B. josephinae (Josephine's lily). Fall-flowering bulb. H to 1½ft (45cm), S 1½–2ft (45–60cm). Produces a sturdy, leafless stem with a spherical head of 20–30 funnel-shaped, red flowers, each 3–3½in (7–9cm) long, with recurved petal tips. Semierect, oblong leaves develop after flowering. Z12–15

Bryophyllum. See *Kalanchoe*.

BUDDLEIA

SCROPHULARIACEAE

Genus of deciduous, semievergreen or evergreen shrubs, sometimes trees and climbers, grown for their clusters of small, often fragrant flowers. Fully to half hardy. Requires full sun and fertile, well-drained soil. *B. crispa*, *B. davidii*, *B. fallowiana*, *B.* 'Lochinch', and *B.* x *weyeriana* should be cut back hard in spring. Prune *B. alternifolia* by removing shoots that have flowered. Other species may be cut back lightly after flowering. Propagate by semiripe cuttings in summer.
B. agathosma. Deciduous, upright shrub. H and S 10ft (3m). Large, triangular-shaped, feltlike, silvery-green leaves have wavy margins. Fragrant, tubular, lilac flowers, with orange centers, are borne in late spring. Z5–7
B. alternifolia (illus. p.114). Deciduous, arching shrub that can be trained as a weeping tree. H and S 12ft (4m). Slender, pendent shoots carry narrow, gray-green leaves. Neat clusters of fragrant, lilac-purple flowers are produced in early summer. Z6–9
B. asiatica. Evergreen, arching shrub. H and S 10ft (3m). Long plumes of very fragrant, tubular, white flowers are borne amid long, narrow, dark green leaves in late winter and early spring. Grow against a south- or west-facing wall. Z8–9
B. colvilei. Deciduous, arching shrub, often treelike with age. H and S 20ft (6m). Has dark green foliage and bears drooping racemes of large, white-centered, deep pink to purplish-red flowers in early summer. Z8–9. **'Kewensis'** (illus. p.114), H and S 15ft (5m), has lance-shaped, dark green leaves and large, tubular, white-throated, deep red flowers that hang in drooping clusters during early summer.
B. crispa illus. p.204.
B. davidii (Butterfly bush). Variable, fast-growing, deciduous shrub. H 10–15ft (3–5m), S to 15ft (5m). Long, arching branches bear lance-shaped, pointed, mid- to gray-green leaves, to 10in (25cm) long. Bears dense, semipendent panicles, to 8in (20cm) or more, of small, very fragrant, tubular, lilac to purple or white flowers from midsummer to fall. Tolerant of dry conditions. Z6–9. **'Black Knight'** (illus. p.114) has dark green leaves with white-felted undersides and dark violet-purple flowers. **'Blue Horizon'** has large panicles, 1½ft (45cm) long, of rich blue flowers. **'Dartmoor'** (illus. p.114) has deeply cut leaf margins and produces large, branched panicles of deep rich lilac-purple flowers. **'Empire Blue'** has rich violet-blue flowers. **'Harlequin'** has red-purple flowers. **'Monite'** see *B.d.* 'Nanho White'. **'Monum'** see *B.d.* 'Nanho Purple. **'Nanhoensis Alba'** see *B.d.* 'Nanho White'. **'Nanho Purple'** (syn. *B.d.* 'Monum') is low-growing, bearing rich lavender-purple flowers for many weeks from midsummer. **'Nanho White'** (syn. *B.d.* 'Monite', *B.d.* 'Nanhoensis Alba') is low-growing, with white flowers for many weeks from midsummer. **'Peace'** bears long plumes of white flowers. **'Pink Delight'** see *B.* 'Pink Delight'. **'Royal Red'** has rich purple-red flowers. **'White Profusion'** (illus. p.114) bears abundant, snow-white flowers, each with a yellow eye.
B. fallowiana. Deciduous, arching shrub. H 6ft (2m), S 10ft (3m). Shoots and lance-shaped leaves, when young, are covered with white hairs; foliage then becomes dark gray-green. Has fragrant, tubular, lavender-purple flowers in late summer and early fall. Often damaged in very severe winters; grow against a wall in cold areas. Z6–9. **var. *alba*** has white flowers.
B. globosa illus. p.116.
***B.* 'Lochinch'** (illus. p.114). Deciduous, arching shrub. H 8ft (2.5m), S 10ft (3m). Long plumes of fragrant, tubular, lilac-blue flowers are borne above lance-shaped, gray-green leaves in late summer and fall. Z6–9
B. madagascariensis, syn. *Nicodemia madagascariensis*. Evergreen, arching shrub. H and S 6–12ft (2–4m). Has narrowly lance-shaped, dark green leaves, white beneath, and, in late winter and spring, long clusters of tubular, orange-yellow flowers. Grow against a south- or west-facing wall. Z10–11
***B.* 'Pink Delight'**, syn. *B. davidii* 'Pink Delight' (illus. p.114). Striking deciduous shrub. H and S 6ft (2m). Bears panicles, 12in (30cm) long, of orange-eyed, bright pink flowers from mid- to late summer. Z6–10
B. salviifolia (South African sage wood; illus. p.114). Semievergreen, arching shrub. H 10ft (3m), S 10ft (3m) or more. Has sagelike, lance-shaped, wrinkled, blue-green leaves, covered in fine hairs. In late fall–early winter, bears fragrant, tubular, white to pale lilac flowers. Z8–11
B.* x *weyeriana. Deciduous, arching shrub. H 12ft (4m), S 10ft (3m). Bears lance-shaped, dark green leaves, and loose, rounded clusters of tubular, orange-yellow flowers, often tinged purple, from midsummer to fall. Z5–9.
'Moonlight' (illus. p.114) bears pale cream flowers with deep orange-yellow throats. **'Sungold'** (illus. p.114) has dense clusters of dark orange-yellow flowers.

BULBOCODIUM

COLCHICACEAE/LILIACEAE

Genus of spring-flowering corms, related to *Colchicum* and with funnel-shaped flowers. Particularly suited to rock gardens

and cool greenhouses. Requires an open, sunny site and well-drained soil. Propagate by seed sown in fall or by division in late summer and early fall.
B. vernum illus. p.418.

BUPHTHALMUM

ASTERACEAE/COMPOSITAE

Genus of summer-flowering perennials. Requires full sun; grows well in any but rich soil. Propagate byseed in spring or by division in early spring. Needs frequent division to curb invasiveness.
B. salicifolium (Yellow ox-eye) illus. p.276.
B. speciosum. See *Telekia speciosa*.

BUPLEURUM

APIACEAE/UMBELLIFERAE

Genus of annuals, perennials, and semievergreen or evergreen shrubs, grown for their foliage and flowers. Suits coastal gardens. Needs full sun and well-drained soil. Propagate by semiripe cuttings in summer.
B. fruticosum (Shrubby hare's ear) illus. p.139.

BUTOMUS

BUTOMACEAE

Genus of one species of deciduous, perennial, rushlike, marginal water plant, grown for its fragrant, cup-shaped flowers. Requires an open, sunny situation in up to 10in (25cm) depth of water. Propagate by division in spring or by seed in spring or late summer.
B. umbellatus (Flowering rush) illus. p.438.

BUXUS

Boxwood, Box

BUXACEAE

Genus of evergreen shrubs and trees, grown for their foliage and habit. Makes excellent edging, hedging and topiary. Flowers are insignificant. Needs sun or semishade and any but waterlogged soil. Trim hedges in summer. Promote new growth by cutting back stems to 12in (30cm) or less in late spring. Propagate by semiripe cuttings in summer. ⓘ Contact with sap may irritate skin.
B. balearica (Balearic boxwood) illus. p.145.
B. microphylla (Small-leaved boxwood). Evergreen, bushy shrub. H 2½ft (75cm), S 5ft (1.5m). Forms a dense, rounded mass of small, oblong, dark green leaves. Z6–9. **'Green Pillow'** illus. p.167.
B. sempervirens (Common boxwood). Evergreen, bushy shrub or tree. H and S 15ft (5m). Produces oblong, glossy, dark green leaves. Useful for hedging and screening. Z6–8. **'Elegantissima'** has dense growth, producing narrow, white-margined leaves. **'Graham Blandy'** is very narrow with a single, vertical leader. **'Handsworthiensis'** illus. p.144. **'Suffruticosa'** illus. p.167.
B. wallichiana (Himalayan boxwood). Slow-growing, evergreen, bushy shrub with an open habit. H and S 8ft (2.5m). Has long, narrow, glossy, bright green leaves. Z9–10

C

CAESALPINIA

CAESALPINIACEAE/LEGUMINOSAE

Genus of deciduous or evergreen trees, scandent to climbing shrubs, and perennials, grown for their foliage and flowers. Needs full sun and fertile, well-drained soil. Propagate by softwood cuttings in summer or by seed in fall or spring.
C. gilliesii, syn. *Poinciana gilliesii*, illus. p.116.
C. pulcherrima, syn. *Poinciana pulcherrima* (Barbados pride). Evergreen shrub or tree of erect to spreading habit. H and S 10–20ft (3–6m). Has fernlike leaves composed of many small, mid-green leaflets. In summer, bears cup-shaped, yellow flowers, 1¼in (3cm) across, with very long, red anthers, in short, dense, erect racemes. Z9–11

CALADIUM

ARACEAE

Genus of perennials with seasonally dormant or evergreen tubers from which arise long-stalked, ornamental leaves. Requires partial shade and moist, humus-rich soil. After leaves have died down, store tubers in a frost-free, dark place. Propagate by separating small tubers when planting in spring. ⓘ Contact with all parts may irritate skin, and may cause mild stomach upset if ingested.
C. bicolor, syn. *C.* x *hortulanum* (Angel wings). Slender-stemmed perennial. H 6–12in (15–30cm), S 5–8in (13–20cm). Arrow-, shield-, or lance-shaped leaves are dark green, streaked, or spotted white, pink, or red. Z15. (min. 55°F/13°C). **'Candidum'** see *C.* 'Candidum'. **'John Peed'** has purple stems and waxy, green leaves with metallic orange-red centers and scarlet veins. **'Pink Beauty'** illus. p.470. **'Pink Cloud'** has large, dark green leaves with mottled pink centers, and pink to white areas along the veins. **'White Christmas'** see *C.* 'White Christmas'.
***C.* 'Candidum'**, syn. *C. bicolor* 'Candidum'. Tufted perennial. H and S to 36in (90cm). Triangular, green-veined, white leaves, to 18in (45cm) long, have arrow-shaped bases and long leaf stalks. Intermittently bears white spathes; small flowers clustered on the spadix sometimes produce whitish berries. Z15 (min. 55°F/13°C)
C.* x *hortulanum. See *C. bicolor*.
***C.* 'White Christmas'**, syn. *C. bicolor* 'White Christmas'. Tuberous perennial. H to 6–12in (15–30cm), S 5–8in (13–20cm). Slim stems carry arrow-, shield-, or lance-shaped, white, green-veined leaves. Z9–11 (min. 55°F/13°C)

CALAMAGROSTIS

Reed grass, Smallweed

POACEAE/GRAMINAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
C.* x *acutiflora (Feather reed grass). Slow-spreading, clump-forming, perennial grass. H 2–6ft (60cm–180cm), S 2–4ft (60cm–120cm). Has arching, slightly glossy, mid-green leaves, 18–36in (45–90cm) long. Stiff, erect stems produce soft, silvery bronze to pale purple-brown, narrow flower spikes, in mid- and late summer; these last during winter. Z5–9.
'Avalanche' has variegated leaves, white in the centers with green margins. **'Karl Foerster'**, H to 6ft (1.8m), S 2ft (60cm), has pink-bronze flower spikes, fading to buff or pale brown. Leaves of **'Overdam'**, H to 4ft (1.2m), have pale yellow margins and stripes that age to pink-flushed white. Bears purplish flower spikes, turning grayish-pink.
C. brachytricha illus. p.284.

CALANTHE

ORCHIDACEAE

See also ORCHIDS.
C. sieboldii. See *C. striata*.
C. striata, syn. *C. sieboldii*, illus. p.275.
C. vestita (illus. p.466). Deciduous, terrestrial orchid. H 1.3ft (1m), S 3ft (1m). In winter, produces arching sprays of many white or pale rose pink flowers, 1½in (4cm) across, each with a large, red-marked lip. Has large, broadly ovate, ribbed, soft leaves, 12in (30cm) long. Needs semishade and regular feeding in summer. Z12 (min. 64°F/18°C, max. 86°F/30°C)

Calathea. See *Goeppertia* except for: *C. oppenheimiana* for which see *Ctenanthe oppenheimiana*.

CALCEOLARIA

Pouch flower, Slipper flower, Slipperwort

CALCEOLARIACEAE

Genus of annuals, biennials, perennials, and shrubs, some of them scandent. Most prefer sun but some like a shady, cool site and moist but well-drained soil, incorporating sharp sand and compost, and dislike wet conditions in winter. Propagate by softwood cuttings in late spring or summer or by seed in fall.
C. acutifolia. See *C. polyrrhiza*.
C. arachnoidea illus. p.341.
C. darwinii. See *C. uniflora* var. *darwinii*.
C. fothergillii. Evergreen, clump-forming, short-lived perennial. H and S 5in (12cm). Has a rosette of rounded, light green leaves with hairy edges and, in summer, solitary, pouch-shaped, sulfur-yellow flowers with crimson spots. Good for a sheltered rock ledge or trough or in an alpine house. Needs gritty, peaty soil. Prone to aphid attack. Z8–9
C. integrifolia, syn. *C. rugosa*. Evergreen, upright subshrub, sometimes grown as an annual. H to 4ft (1.2m), S 2ft (60cm). In summer, bears crowded clusters of pouch-shaped, yellow to red-brown flowers above oblong to elliptic, mid-green leaves, sometimes rust-colored beneath. Z8–9. **'Sunshine'**, H to 12in (30cm), is compact and bushy with ovate, mid-green leaves and heads of small, rounded, pouched, bright golden-yellow flowers in late spring and summer.
***C.* 'John Innes'** illus. p.277.
C. pavonii. Robust, evergreen, scandent climber. H 6ft (2m) or more. Has ovate, serrated, downy leaves with winged stalks. Pouched, yellow, purple-marked flowers are borne in large trusses in summer. Z8–9
C. polyrrhiza, syn. *C. acutifolia*. Evergreen, prostrate perennial. H 1in (25cm), S 6in (15cm). Has rounded, hairy, mid-green leaves along the flower stems, which bear pouch-shaped, purple-spotted, yellow flowers in summer. Good for a shady rock garden. May also be propagated by division in fall or spring. Z8–9
C. rugosa. See *C. integrifolia*.
C. tenella illus. p.371.
C. uniflora* var. *darwinii, syn. *C. darwinii*. Evergreen, clump-forming, short-lived perennial. H 3in (8cm), S 4in (10cm). Bears rounded, wrinkled, glossy, dark green leaves. In late spring, flower stems carry pendent, pouch-shaped, yellow flowers with dark brown spots on lower lips and central, white bands. Difficult to grow. Needs a sheltered, sunny site in moist, gritty, peaty soil. Prone to attack by aphids. Z8–9
***C.* 'Walter Shrimpton'** illus. p.372.

CALENDULA

Marigold

ASTERACEAE/COMPOSITAE

Genus of bushy, fast-growing annuals and woody-based, evergreen perennials. Grow in sun or partial shade and in any well-drained soil. Deadhead regularly to prolong flowering. Propagate annuals by seed sown outdoors in spring or fall, shrubs by stem cuttings in summer. Annuals may self-seed. Cucumber mosaic virus and powdery mildew may cause problems.
C. officinalis. Fast-growing, bushy annual. Tall cultivars, H and S 2ft (60cm); dwarf forms, H and S 12in (30cm). All have lance-shaped, strongly aromatic, pale green leaves. Daisylike, single or double flower heads in a wide range of yellow and orange shades are produced from spring to fall. Z8–9. **'Apricot Twist'** bears double, soft apricot-orange flower heads. **'Daisy May'** illus. p.321. **Fiesta Gitana Group** illus. p.325. **Pacific Beauty Series 'Lemon Queen'** illus. p.322. Flower heads of **'Snow Princess'** are creamy-white with brown or yellow centers.

CALIBRACHOA

SOLANACEAE

A genus of low-growing, evergreen shrubs and subshrubs, once included in *Petunia*, grown for their showy flowers. Most hybrids will withstand light frost. Propagation is mainly by semiripe cuttings, by seed in spring when available. Good in hanging baskets and containers.
***C.* hybrids.** Low-growing and trailing, or weakly upright, evergreen subshrubs, often grown as annuals. H 4–16in (10–40cm), S 12–36in (30–100cm). Has elliptic to ovate, mid-green leaves and solitary, trumpet-shaped flowers from late spring to fall. Z10–11. **Cabaret Series**, H 6–10in (15–25cm), S 10–12in (25–30cm), are mound-forming and spreading, with white, pink, red, yellow, blue, or purple flowers from summer to fall. **Cabaret Series Cabaret Apricot ('Balcabapt')**, H 5in (13cm), S 18in (45cm), is prolific and trailing,with twiggy stems and dark green leaves. Flowers are flecked in apricot,

cream, and yellow. **Cabaret Series** **Cabaret Light Pink ('Balcablitpi')** illus. p.300. **Can-Can Series**, H and S 10–15in (25–38cm), are mound-forming to trailing. Flowers (sometimes bicolored) are creamy-white, pink, orange, and reddish-purple. **Can-Can Series 'Double Can-Can'** has double flowers. **Can-Can Series 'Hot Pink Star'** illus. p.306. **'Crave Strawberry Star'** has white flowers, each marked with a large, central, deep strawberry pink "star." **Kabloom Series**, H 12in (30cm), S 8in (20cm), are compact, trailing perennials, with white, pink, blue, purple, scarlet, or yellow flowers. **Kabloom Series 'Denim'** has blue flowers. **Starlight Series,** H and S 8–12in (20–30cm), are prolific trailing perennials, with bright pink, cherry red, or blue flowers, each with a contrasting, central yellow "star."

CALLA

ARACEAE

Genus of one species of deciduous or semievergreen, marginal aquatic perennial grown for its foliage and showy spathes that surround insignificant flower clusters. Requires a sunny position, in mud or in water to 10in (25cm) deep. Propagate by division in spring or by seed in late summer. ⓘ Contact with the foliage may aggravate skin allergies.
C. palustris (Bog arum) illus. p.434.

CALLIANDRA

Powder-puff tree

MIMOSACEAE/LEGUMINOSAE

Genus of evergreen perennials, shrubs, and small trees grown for their flowers and overall appearance. Requires full light or partial shade and well-drained soil. Water containerized plants freely when in full growth, much less when temperatures are low. To restrict growth, cut back stems by one-half to two-thirds after flowering. Propagate by seed sown indoors in spring. Whitefly and mealy bug may be troublesome.
C. eriophylla (Fairy duster) illus. p.453.
C. haematocephala, syn. *C. inaequilatera*. Evergreen, spreading shrub. H 10–20ft (3–6m), S 6–12ft (2–4m). Leaves have 16–24 leaflets. From late fall to spring, bears usually bright red, sometimes pink (illus. p.454), or white flowers, with prominent, bright red, pink or white stamens. Z12–15 (min. 55°F/13°C)
C. inaequilatera. See *C. haematocephala*.
C. tweediei (Mexican flame bush). Evergreen, large shrub or small tree. H 6–15ft (2–5m), S 5–6ft (1.5–2m), or more. Mid-green leaves are divided into 15–20 pairs of narrowly oblong, often curved leaflets. Round heads of green or white flowers, with red stamens, open from winter to spring. Z11–12 (min. 55°F/13°C)

CALLIANTHEMUM

RANUNCULACEAE

Genus of perennials, grown for their daisylike flowers and thick, dissected leaves. Excellent for rock gardens and alpine houses. Needs sun and moist but well-drained soil. Propagate by seed when fresh.
C. coriandrifolium, syn. *C. rutifolium*. Prostrate perennial with upright flower stems. H 3in (8cm), S 8in (20cm). Long-stalked, very dissected, blue-green leaves form open rosettes. Bears short-stemmed, many-petaled, white flowers, with yellow centers, in spring. Susceptible to slugs. Z4–7
C. rutifolium. See *C. coriandrifolium*.

CALLICARPA

Beauty berry

LAMIACEAE/VERBENACEAE

Genus of deciduous and evergreen shrubs and trees, grown for their small but striking, clustered fruits. Does best in full sun and fertile, well-drained soil. Propagate by softwood cuttings in summer.
C. bodinieri. Deciduous, bushy shrub. H 10ft (3m), S 8ft (2.5m). Has ovate, dark green leaves. Bears tiny, star-shaped, lilac flowers in midsummer, followed by dense clusters of spherical, violet fruits. Z5–8.
var. *giraldii* (Beauty berry) illus. p.141.

CALLISIA

SYN. PHYODINA

COMMELINACEAE

Genus of creeping, spreading, or sub-erect, evergreen perennials, and, rarely, annuals, grown for their ornamental foliage and trailing habit. Grow in full light, but out of direct sunlight, in fertile, well-drained soil. Propagate by tip cuttings in spring, either annually or when plants become straggly.
C. navicularis, syn. *Tradescantia navicularis* (Chain plant). Evergreen, low-growing perennial with creeping, rooting shoots, 20in (50cm) or more long. H 2–3in (5–8cm), S indefinite. Has 2 rows of small, ovate, keeled leaves, sheathing the stem. Bears stalkless clusters of small, 3-petaled, pinkish-purple flowers in leaf axils from summer to fall. Z6–8 (min. 50°F/10°C)
C. repens. Evergreen, creeping perennial with rooting stems. H 4in (10cm), S indefinite. Has densely packed leaves, sometimes white-banded and often purplish beneath. Inconspicuous, white flowers are rarely produced in winter. Z14–15 (min. 50°F/10°C)

CALLISTEMON

Bottlebrush

MYRTACEAE

Genus of evergreen trees and shrubs, usually with narrow, pointed leaves, grown for their clustered flowers, which, with their profusion of long stamens, resemble bottlebrushes. Where marginally hardy, grow against a warm, sunny wall or in a cool greenhouse. Requires full sun and fertile, well-drained soil. Propagate by semiripe cuttings in summer or by seed in fall or spring.
***C. citrinus* 'Splendens'** (Crimson bottlebrush) illus. p.203.
***C. linearis*.** Evergreen, spreading, dense to open shrub. H 6–12ft (2–4m), S 10–15ft (3–5m). Has linear, rigid, sharp-pointed, thick, dark green leaves and spikes of rich, matte red flowers from late spring to fall. Z8–11
C. pallidus illus. p.139.
C. paludosus. See *C. sieberi*.
C. pityoides (Alpine bottlebrush). Evergreen, compact, upright shrub. H 5ft (1.5m), S 3ft (1m). Densely covered with sharply pointed, dark green leaves, and has short spikes of yellow flowers in mid- and late summer. Z12–15
C. rigidus (Stiff bottlebrush) illus. p.137.
C. salignus (Willow bottlebrush). Erect to spreading shrub or small tree. H 15–50ft (5–15m), S 10–15ft (3–5m). Has papery-white bark and willowlike, narrowly lance-shaped, pale green leaves. Bears spikes of green or white, sometimes red, pink, or mauve, flowers from late spring to midsummer. Z8–11
C. sieberi, syn. *C. paludosus* (Alpine bottlebrush). Evergreen, bushy, dense shrub. H 5ft (1.5m), S 3ft (1m). Has short, narrowly lance-shaped, rigid, mid-green leaves and, from mid- to late summer, small clusters of pale yellow flowers. Z10–11
C. speciosus (Albany bottlebrush). Evergreen, bushy shrub. H and S 10ft (3m). Produces long, narrow, gray-green leaves. Cylindrical clusters of bright red flowers open in late spring and early summer. Z10–11
C. subulatus illus. p.203.
C. viminalis (Weeping bottlebrush). Evergreen, arching shrub. H and S 15ft (5m). Narrowly oblong, bronze, young leaves mature to dark green. Bears clusters of bright red flowers in summer. Z9–11

CALLISTEPHUS

China aster

ASTERACEAE/COMPOSITAE

Genus of one species of erect, bushy annual. Needs sun, a sheltered position and fertile, well-drained soil. Tall cultivars need support; all should be deadheaded. Propagate by seed sown under glass in spring or by seed may also be sown outdoors in midspring. Wilt disease, virus diseases, foot rot, root rot, and aphids may be a problem.
***C. chinensis* cultivars.** Selections from *C. chinensis* are fast-growing, bushy annuals. Tall cultivars, H 2ft (60cm), S 18in (45cm); intermediate, H 18in (45cm), S 12in (30cm); dwarf, H 10–12in (25–30cm), S 12–18in (30–45cm); very dwarf, H 8in (20cm), S 12in (30cm). Mid-green leaves are ovate to triangular, coarsely toothed, to 3in (8cm) long. From late summer to fall, they bear branching stems of single to fully double, chrysanthemumlike flower heads, 3–5in (7–12cm) across, in a wide color range, including pink, red, blue and white. Z10–11. **Duchesse Series** (tall) has incurved, chrysanthemumlike flower heads. **Milady Super Series** (dwarf) has incurved, fully double flower heads in mixed or single colors (blue, illus. p.312; rose, illus. p.304). **Ostrich Plume Series** (tall) illus. p.303. **Starlight Series** (very dwarf) are compact, producing double, pale pink, rose-pink, violet-blue, dark red, or purple flowers; are resistant to wilt.

CALLUNA

Heather, Ling

ERICACEAE

Genus of one species of evergreen shrub. Requires sun and acidic soil. Propagate named cultivars by cuttings or layering. See also HEATHERS.
C. vulgaris (Ling, Heather). Evergreen, bushy shrub. H to 2ft (60cm), S 18in (45cm). Tiny, leathery, arrow-shaped leaves, in opposite and overlapping pairs, range in color from bright green to many shades of gray, yellow, orange, and red. Spikes of bell-shaped, single or double flowers are produced from midsummer to late fall. Unlike in *Erica*, flower color derives from the large sepals. In some cultivars ("bud-bloomers"), the cone-shaped buds never open, providing attractive color for a long period. The following cultivars, H 18in (45cm), have mid-green leaves and bear single flowers in late summer and early fall, unless otherwise stated. Z5–7. **'Alba Plena'**, H 12–18in (30–45cm), bears double, white flowers. **'Alexandra'**, H 12in (30cm), S 16in (40cm), has a compact, upright habit, dark green foliage, and white and crimson buds, which turn deep crimson, until early winter. **'Alicia'**, H 12in (30cm), S 16in (40cm), is compact and has white buds until early winter. **'Allegro'**, H 2ft (60cm), is compact and produces purple-red flowers. **'Alportii'**, H 24–36in (60–90cm), has purple-red flowers. **'Amilto'** has bronze-yellow young foliage, turning yellow in summer and orange-red in winter (the color is best in harsh conditions); deep magenta flowers are borne in late summer. **'Anette'**, H 14in (35cm), S 16in (40cm), has clear pink buds until early winter. **'Annemarie'** (illus. p.166), H 20in (50cm), S 2ft (60cm), has outstanding, double, rose-pink flowers, ideal for cutting. **'Anthony Davis'** has gray-green leaves and white flowers in long sprays. **'Athene'** is a bud-bloomer, bearing cerise-ruby buds, from late summer to late fall. **'Beoley Gold'** (illus. p.166), S 20in (50cm), has golden foliage and white flowers. **'Beoley Silver'**, H 16in (40cm), has silver foliage and white flowers. **'Blazeaway'**, H 14in (35cm), S 2ft (60cm), has gold foliage in summer that turns orange, then fiery red in winter. **'Boskoop'**, H 12in (30cm), is compact with golden foliage that turns deep orange in winter and lilac-pink flowers. **'Con Brio'**, H 14in (35cm), S 18in (45cm), has bronze-yellow foliage, red-tinted in winter, and ruby-red flowers. **'County Wicklow'**, H 10in (25cm), S 14in (35cm), is compact with double, shell-pink flowers. **'Dark Beauty'**, H 8in (20cm), S 14in (35cm), is neat and compact, and bears bright, semidouble, crimson flowers. **'Darkness'**, H 16in (40cm), S 14in (35cm), is compact with crimson flowers. **'Dark Star'** (illus. p.166), H 8in (20cm), S 14in (35cm), has short racemes of semidouble, deep crimson flowers. **'Elsie Purnell'**, H 20in (50cm), S 30in (75cm), is spreading, with grayish-green leaves and double, pale pink flowers. **'Finale'** bears dark pink flowers from late fall to early winter. **'Firefly'**, 20in (50cm), with deep mauve flowers, has foliage that is terracotta in summer, brick-red in winter. **'Foxii Nana'**, H 6in (15cm), forms a low, miniature mound of bright green foliage and produces a few mauve-pink flowers. **'Fred J. Chapple'** has bright pink-, cream-, and coral-tipped shoots in spring; mauve-pink flowers are borne on long stems. **'Gold Haze'** has pale golden foliage and white flowers.

'Hammondii Aureifolia', H 12in (30cm), S 16in (40cm), has white flowers; foliage is light green, and shoots tipped yellow in spring and early summer. **'H.E. Beale'**, H 20in (50cm), is one of the best double-flowered heathers, with pale pink flowers on long stems. **'J.H. Hamilton'**, H 8in (20cm), S 16in (40cm), is neat, with double, salmon-pink flowers. **'Joy Vanstone'** has pale golden foliage, turning to orange and bronze, and mauve-pink flowers. **'Kerstin'**, H 12in (30cm), bears mauve flowers and has downy, deep lilac-gray foliage in winter; the shoots are tipped pale yellow and red in spring. **'Kinlochruel'**, H 12in (30cm), S 14in (35cm), bears an abundance of large, double, white flowers. **'Mair's Variety'**, an old cultivar, has white flowers on long spikes. **'Marleen'** has long-lasting, white buds tipped purple, borne from early to late fall. **'Mullion'** H 10in (25cm), S 20in (50cm), is a low, spreading shrub with rich mauve-pink flowers. **'My Dream'**, H 18in (45cm), S 20in (50cm), bears double, white flowers on long, tapering stems. **'Peter Sparkes'** (illus. p.166), H 20in (50cm), S 22in (55cm), bears double, deep pink flowers in long spikes. **'Red Favorit'**, H 8in (20cm), S 28in (70cm), has a broad, spreading habit, and bears double, crimson flowers; foliage is dark green in summer, turning bronze in winter. **'Robert Chapman'** is a spreading cultivar grown mainly for its foliage, which is golden-yellow in summer, turning orange and brilliant red in winter; flowers are mauve-pink. **'Ruth Sparkes'**, H 10in (25cm), has golden foliage and double, white flowers. '**Silver Knight'**, H 12in (30cm), is upright and vigorous, with gray foliage and mauve-pink flowers. **'Silver Queen'**, H 16in (40cm), S 22in (55cm), is spreading, with outstanding, downy, silvery-gray foliage and dark mauve-pink flowers. **'Sir John Charrington'** has brightly colored foliage, that varies from golden-yellow in summer to orange and red in winter, and dark mauve-pink flowers. **'Sister Anne'**, H 6in (15cm), is low and spreading, with gray-green foliage turning bronze in winter, and pale mauve-pink flowers. **'Spring Cream'** has bright green foliage, the young shoots tipped cream in spring, and white flowers. **'Spring Torch'**, H 16in (40cm), S 2ft (60cm), has cream, orange, and red shoot tips in spring, and mauve flowers. **'Sunset'**, H 10in (25cm), has brightly colored foliage, changing from golden-yellow in spring to orange in summer and fiery red in winter; flowers are mauve-pink. **'Tib'** (illus. p.166), H 12in (30cm), S 16in (40cm), is the earliest-flowering double cultivar, bearing small, double, deep pink flowers in early summer. **'Velvet Fascination'**, H 20in (50cm), S 28in (70cm), is vigorous and erect, with silvery-gray foliage and white flowers. **'White Coral'**, H 8in (20cm), S 16in (40cm), has bright green foliage and bears double, white flowers in early fall. **'White Lawn'**, H 4in (10cm), is a prostrate shrub with bright green foliage and white flowers on long stems; is suitable for a rock garden. **'Wickwar Flame'** (illus. p.166) is vigorous and has foliage in shades of yellow, orange and flame that are particularly effective in winter; flowers are mauve-pink. **'Yvette's Gold'**, H 12in (30cm), S 20in (50cm), is robust and upright, with golden foliage and white flowers.

CALOCEDRUS

CUPRESSACEAE

See also CONIFERS.

C. decurrens, syn. *Libocedrus decurrens* (Incense cedar), illus. p.101.

Calocephalus brownii. See *Leucophyta brownii*.

CALOCHORTUS

Cat's ears, Fairy lantern, Mariposa tulip

LILIACEAE

Genus of bulbs, grown for their spring and summer flowers. Needs a sheltered, sunny site and well-drained soil. In cold, damp climates, cover or lift spring-flowering species when dormant, or grow in cold frames or cold houses. After flowering, remove bulbils for propagation. Propagate by seed or bulbils: spring-flowering species in fall, summer-flowering species in spring. ***C. albus.*** Spring-flowering bulb. H 8–20in (20–50cm), S 2–4in (5–10cm). Has long, narrow, erect, gray-green leaves near the base of the loosely branched stem. Each branch bears a pendent, round to bell-shaped, white or pink flower. Z6–10

C. barbatus, syn. *Cyclobothra lutea*, illus. p.412.

C. luteus (Yellow mariposa) illus. p.406.

C. monophyllus. Summer-flowering bulb. H 3–8in (8–20cm), S 2in (5cm). Has an erect, branched stem with 1–3 slender leaves and one long, narrow basal leaf. Bears cup-shaped, deep yellow flowers, often with a reddish mark on the claws. Petals are fringed and densely bearded. Z7–10

C. splendens. Late spring-flowering bulb. H 8–24in (20–60cm), S 2–4in (5–10cm). Bears 1 or 2 linear, erect leaves near base of branched stem and 1–4 upward-facing, saucer-shaped, pale purple flowers, 2–3in (5–7cm) across, with a darker blotch at the base of each of the 3 large petals. Z8–10

C. superbus illus. p.409.

C. venustus illus. p.399.

C. vestae. Late spring-flowering bulb. H 8–24in (20–60cm), S 2–4in (5–10cm). Similar to *C. splendens*, but flowers are white or purple, with a rust-brown mark near the base of each of 3 large petals. Z5–10

C. weedii. Summer-flowering bulb. H 12–24in (30–60cm), S 2–4in (5–10cm). Has a linear, erect leaf near the stem base. Produces usually 2 upright, saucer-shaped flowers, 1½–2in (4–5cm) across, that are orange-yellow with brown lines and flecks, and hairy inside. Z7–10

CALOMERIA

syn. HUMEA

ASTERACEAE/COMPOSITAE

Genus of one species of strongly aromatic biennial. Needs sun and fertile, well-drained soil. Propagate by seed sown under glass in midsummer.

C. amaranthoides, syn. *Humea elegans* (Incense plant). Erect, branching biennial. H to 6ft (1.8m), S 3ft (90cm). Has lance-shaped leaves and heads of tiny, pink, brownish-red or crimson flowers with a strong fragrance of incense in summer-fall. Z12–15 (min. 39°F/4°C)

Calonyction aculeatum. See *Ipomoea alba*.

Caloscordum neriniflorum. See *Allium neriniflorum*.

CALOTHAMNUS

Net bush

MYRTACEAE

Genus of evergreen, summer-flowering shrubs, grown for their flowers and overall appearance. Thrives in a dryish, airy environment. Needs full sun and well-drained, sandy soil. Water containerized plants moderately when in full growth, less at other times. Propagate by seed or semiripe cuttings in summer.

C. quadrifidus (Common net bush). Erect to spreading, evergreen shrub. H 6–12ft (2–4m), S 6–15ft (2–5m). Has linear, grayish- to dark green or gray leaves. Irregular, axillary, one-sided spikes of rich red, feathery flowers, 1in (25cm) long, are borne from late spring to fall, often forming clusters, 8in (20cm) or more across, around the stems. Z12–15 (min. 41°F/5°C)

CALTHA

RANUNCULACEAE

Genus of deciduous, perennial, marginal water plants, bog plants, and rock-garden plants, grown for their attractive flowers. Most prefer an open, sunny position. Smaller-growing species suit rock gardens, troughs, and alpine houses; they require moist, but well-drained soil. Larger species are best in marginal conditions. Propagate species by seed in fall or by division in fall or early spring, selected forms by division in fall or early spring.

C. leptosepala illus. p.435.

C. palustris (Kingcup, Marsh marigold) illus. p.444. **var. *alba*** (syn. *C.p.* 'Alba') is a compact, deciduous, perennial, marginal water plant. H 9in (23cm), S 12in (30cm). Has rounded, glossy, dark green leaves, and bears solitary, white flowers with yellow stamens in early spring, often before the foliage develops. **'Flore Pleno** (syn. *C.p.* 'Plena') illus. p.444. **'Plena'** see *C.p.* 'Flore Pleno'. Z3–7

CALYCANTHUS

syn. SINOCALYCANTHUS

Allspice, Spicebush

CALYCANTHACEAE

Genus of deciduous, summer-flowering shrubs, grown for their purplish- or brownish-red flowers with strap-shaped petals. Requires sun or light shade and fertile, deep, moist but well-drained soil. Propagate by softwood cuttings in summer or by seed in fall.

C. floridus (Carolina allspice, Strawberry bush). Deciduous, bushy shrub. H and S 6ft (2m). Has ovate, aromatic, dark green leaves. From early to midsummer, bears fragrant, brown-red flowers with many spreading petals. Z5–9

C. occidentalis (California allspice) illus. p.137.

***C.* x *raulstonii* 'Hartlage Wine'.** Vigorous, deciduous, upright, spreading shrub. H and S 10ft (3m). Has broadly ovate, shiny, dark green leaves, which turn yellow in fall. A profusion of solitary, almost scentless, maroon-red flowers, with cream-tipped inner tepals, are borne from late spring to early summer. Z5–9

CALYPSO

ORCHIDACEAE

See also ORCHIDS.

C. bulbosa. Deciduous, terrestrial orchid. H 2–8in (5–20cm), S 6in (15cm). Cormlike stem produces a single, ovate, pleated leaf, 1¼–4in (3–10cm) long. Purplish-pink flowers, ⅝–¾in (1.5–2cm) long, with hairy, purple-blotched, white or pale pink lips, are produced singly in late spring or early summer. Requires a damp, semishaded position with a mulch of leaf mold. Z6–9

CAMASSIA

ASPARAGACEAE

Genus of summer-flowering bulbs, suitable for borders and pond margins. Requires a position in sun or partial shade and deep, moist soil. Plant bulbs in fall, 4in (10cm) deep. Lies dormant in fall and winter. Propagate by seed in fall or by division in late summer. If seed is not required, cut off stems after flowering.

C. esculenta. See *C. quamash*.

C. leichtlinii* subsp. *leichtlinii illus. p.383. **'Semiplena'** is a tuft-forming, summer-flowering bulb. H 3–5ft (1–1.5m), S 8–12in (20–30cm). Has long, narrow, erect, basal leaves. Each leafless stem bears a dense spike of narrow-petaled, double, creamy-white flowers, 1½–3in (4–8cm) across. **subsp. *suksdorfii* Caerulea Group** has dark blue flowers. Z5–9

C. quamash, syn. *C. esculenta* (Common camassia, Quamash), illus. p.411.

CAMELLIA

THEACEAE

Genus of evergreen shrubs and small trees, grown for their flowers and often attractive foliage. Flowers are classified according to the following types: single, semidouble, anemone-form, peony-form (sometimes termed irregular double), rose-form, and formal double. See feature panel pp.120–121 for illustrations and descriptions. Grows well against walls and in containers. Most forms prefer a sheltered position and semishade. Well-drained, neutral to acidic soil is essential. Prune to shape after flowering. Propagate by semiripe or hardwood cuttings from midsummer to early winter or by grafting in late winter or early spring. Aphids, thrips, and scale insects may cause problems under glass.

***C.* 'Black Lace'**, syn. *C. reticulata* 'Black Lace' (illus. p.121). Slow-growing, dense, upright shrub. H 8ft (2.5m), S 6ft (2m). Has ovate, dark green leaves, 3in (8cm) long, and produces large, formal double, deep velvet-red flowers from early to late spring. Z7–8

C. chrysantha. See *C. nitidissima*.

***C.* 'Cornish Snow'**, syn. *C. cuspidata* 'Cornish Snow' (illus. p.120). Fast-growing, evergreen, upright, bushy shrub. H 10ft (3m), S 5ft (1.5m). Has lance-shaped leaves, bronze when young, maturing to dark green. From late winter to spring, bears a profusion of small, single, white flowers. Z7–8

***C.* 'Cornish Spring'**, syn. *C. cuspidata* 'Cornish Spring'. Dense, compact, upright, evergreen shrub. H 8ft (2.5m), S 4ft (1.2m). Has lance-shaped leaves, tinged bronze when young. In spring, bears a profusion of small, single, bright pink flowers. Best in shade. Z7–9

***C. cuspidata*.** Evergreen, upright shrub becoming bushy with age. H 10ft (3m), S 5ft (1.5m). Has small, lance-shaped leaves, bronze when young, maturing to purplish-green. Small, single, pure white flowers are freely produced from leaf axils in early spring. Z7–8.

'Cornish Snow' see *C.* 'Cornish Snow'.

'Cornish Spring' see *C.* 'Cornish Spring'. **'Spring Festival'** see *C.* 'Spring Festival'.

***C.* 'Francie L'.** See *C. reticulata* 'Francie L'.

***C. granthamiana*.** Evergreen, open, large shrub or small tree. H to 10ft (3m), S 6ft (2m). Distinctive, elliptic, leathery leaves are crinkly and glossy, dark green with deeply impressed veins. In late fall, bears large, single, white flowers, to 7in (18cm) across, with broad petals. Z7–8

***C. hiemalis*.** Evergreen, upright, bushy shrub. H 6–10ft (2–3m), S 5ft (1.5m). Has small, lance-shaped leaves. Bears fragrant, single, semi- or irregular double, white, pink, or red flowers in late fall and winter. Good for hedging. Z7–8

***C.* 'Inspiration'**, syn. *C. reticulata* 'Inspiration' (illus. p.121). Evergreen, upright shrub. H 12ft (4m), S 8ft (2.5m). Ovate, leathery leaves are glossy, dark green. Semidouble, phlox-pink flowers are freely produced in spring. Z7–8

***C. japonica*.** Evergreen shrub that is very variable in hardiness, habit, foliage and floral form. H 30ft (10m), S 25ft (8m). Cold-tolerant; some clones are among the most cold-resistant of the genus. Many cultivars are available; they are spring-flowering unless otherwise stated. Z7–8. **'Adelina Patti'** is erect, with pendulous branches. Produces single, rose-pink flowers with white margins and golden yellow anthers. **'Adolphe Audusson'** (illus. p.121) is a very reliable, old cultivar, suitable for all areas; withstands lower temperatures than most other variants. Has broadly lance-shaped, dark green leaves and large, semidouble, dark red flowers with prominent, yellow stamens. **'Alba Plena'** (illus. p.120) has an erect habit with elliptic, mid-green leaves and large, formal double, white flowers. **'Alba Simplex'** is bushy, with broadly lance-shaped, mid-to yellow-green leaves and single, white flowers, occasionally flecked pink, in early spring. **'Alexander Hunter'**, is an upright, compact shrub, producing single, deep crimson flowers, with some petaloids, and lance-shaped, dark green leaves. **'Althaeiflora'** has a vigorous, bushy habit, large, peony-form, dark red flowers, and broadly ovate, very dark green leaves. **'Annie Wylam'** is an upright, compact shrub, excellent for containers; has glossy, dark green leaves and two-tone, pink, peony-form flowers over a long season. **'Apollo'** (syn. *C.j.* 'Paul's Apollo') is a vigorous, branching shrub that produces a profusion of semidouble, red flowers, sometimes blotched white. Leaves are glossy, dark green. **'Berenice Boddy'** is a vigorous shrub with semidouble, light pink flowers amid lance-shaped, dark green leaves. **'Betty Sheffield Supreme'** is upright, with lance-shaped, mid-green leaves. Loose peony-form flowers have white petals bordered with shades of rose-pink. **'Bob Hope'**, H 10ft (3m), S 6ft (2m), is neat and upright, with dark green leaves and large, semidouble or peony-form, bright red flowers with golden stamens. **'Bob's Tinsie'** (illus. p.121), H and S 10ft (3m), has a dense, upright habit, and bears miniature, anemone-form, brilliant red flowers from early to late spring. **'Brushfield's Yellow'** (illus. p.121) has an erect, compact habit, elliptic, dark green leaves and anemone-form, cream flowers, each with a pale yellow center. **'Coquettii'** (syn. *C.j.* 'Glen 40'), H and S 15ft (5m), is a slow-growing, erect shrub with downward sweeping branches. In early to midspring, bears profuse, medium to large, deep red flowers, usually formal double, sometimes peony-form. **'Desire'** is vigorous and upright, with medium-sized to large, formal double, very pale pink flowers with darker pink margins. **'Donckelaeri'** see *C.j.* 'Masayoshi'. **'Elegans'**, H and S 12ft (4m), has a spreading habit and anemone-form, deep rose-pink flowers with central petaloids often variegated white. Leaves are broadly lance-shaped and dark green. **'Elizabeth Weaver'** is moderately vigorous, open and upright in habit, and bears large, coral-pink, formal double flowers. **'Glen 40'** see *C.j.* 'Coquettii'. **'Gloire de Nantes'** is an upright shrub, becoming bushy with age, and produces semidouble, bright rose-pink flowers over a long period. Has ovate to lance-shaped, glossy, dark green leaves. **'Guilio Nuccio'** is an upright, free-flowering cultivar that spreads with age. Bears large, semidouble, rose-red flowers with wavy petals and often a confused center of petaloids and golden stamens. Dark green leaves are lance-shaped and occasionally have "fish-tail" tips. **'Hagoromo'** (syn. *C.j.* 'Magnoliiflora; illus. p.121) has a bushy habit and medium, semidouble, blush-pink flowers with scoop-shaped petals. Twisted, light green leaves point downward. **'Janet Waterhouse'** (illus. p.121) is strong-growing and has semidouble, white flowers with golden anthers borne amid dark green foliage. **'Julia Drayton'**, H 15ft (5m), S 12ft (4m), has an upright habit and large, crimson flowers varying from formal double to rose-form. Dark green leaves are ovate to lance-shaped and slightly twisted. **'Jupiter'**, H 15ft (5m), S 12ft (4m), is an upright shrub with ovate-elliptic, dark green leaves and large, single, pinkish-red flowers with golden stamens and white filaments. **'Kumasaka'** has an upright habit and narrowly lance-shaped, mid-green leaves. Bears formal double, or peony-form, deep rose-pink flowers, sometimes red-streaked, with smaller inner petals. **'Lady Vansittart'**, H and S 12ft (4m), is upright in habit, with unusual, hollylike, twisted, mid-green leaves. Medium, semidouble, white flowers are flushed rose-pink; flower color is variable and often self-colored mutations appear. **'Lavinia Maggi'** (illus. p.121), H and S 15ft (5m), is a vigorous, spreading shrub with formal double, white flowers strongly striped and flecked with pink and carmine. Sometimes sports plain red or white flowers. **'Lily Pons'** has a neat, upright, slightly open habit. Produces distinctive, single or semidouble, white flowers with long, spoon-shaped petals; the long, white stamens have a greenish caste at the bases. **'Lovelight'**, H and S 15ft (5m), is upright and vigorous, with large, semidouble, pure white flowers and dark green leaves. **'Magnoliiflora'** see *C.j.* 'Hagoromo'. **'Margaret Davis'** (illus. p.121) is a spreading cultivar, with ovate to lance-shaped, dark green leaves. Has peony-form blooms with ruffled, creamy-white petals, often lined with pink. Edges of each petal are bright rose-red. **'Masayoshi'** (syn. *C.j.* 'Donckelaeri') is slow-growing, bushy, with semidouble, red flowers, often white-marbled. Has lance-shaped, dark green leaves. **'Mathotiana'** illus. p.137. **'Nobilissima'** (illus. p.120) has a semierect habit, elliptic, dark green leaves and peony-form, lemon-tinted, white flowers borne in late winter and early spring. **'Nuccio's Jewel'** has upright, fairly vigorous, dense growth and peony-form flowers, white or very pale pink, shading to deeper pink at the edges. **'Paul's Apollo'** see *C.j.* 'Apollo'. **'Rubescens Major'** is an upright cultivar, becoming bushy with age, with ovate to lance-shaped, dark green leaves. Bears formal double, crimson-veined, rose-red flowers. **'San Dimas'**, H and S 10ft (3m), is compact and, from early spring, bears medium, semidouble, rich red flowers, which have prominent golden-yellow stamens. **'Sieboldii'** see *C.j.* 'Tricolor'. **'Tomorrow Park Hill'**, one of the best of many mutations of 'Tomorrow', has a vigorous, upright habit. Has lance-shaped, mid-green leaves and bears irregular double flowers with deep pink outer petals gradually fading to soft pink centers that are often variegated with white. **'Tomorrow's Dawn'** is similar to 'Tomorrow Park Hill', but has pale pink flowers, each bordered white and often red-streaked. **'Tricolor'** (syn. *C.j.* 'Sieboldii; illus. p.121), H 6ft (2m), S 10ft (3m), has bright green, crinkled, hollylike leaves, and bears medium, single or semidouble, red flowers, striped pink and white, in early spring.

***C.* 'Leonard Messel'**, syn. *C. reticulata* 'Leonard Messel' (illus. p.121). Evergreen, open shrub. H 12ft (4m), S 10ft (3m). Large, ovate, leathery leaves are matte, dark green. In spring, bears a profusion of large, loose semidouble, rose-pink flowers. Z7–8

***C.* 'Nicky Crisp'.** See *C. pitardii* var. *pitardii* 'Nicky Crisp'.

***C. nitidissima*,** syn. *C. chrysantha*. Fast-growing, evergreen, open shrub or tree. H 20ft (6m) or more, S 10ft (3m). Has large, ovate, leathery, veined, dark green leaves. Small, stalked, single, clear yellow flowers are occasionally produced from leaf axils in early spring. Z7–8

***C. oleifera*.** Evergreen, bushy shrub. H 6ft (2m), S 5ft (1.5m). Leaves are ovate and dark green above, light green beneath. Bears a profusion of single, usually scented, sometimes pinkish, white flowers in mid- and late fall. Z6–9

***C. pitardii* var. *pitardii* 'Nicky Crisp'**, syn. *C.* 'Nicky Crisp'. Evergreen, compact, upright, slow-growing shrub. H and S 3–6ft (1–2m). Has oblong or broadly elliptic, dark green leaves and bears a profusion of semidouble, pale pink flowers over a long period from late winter to midspring. Z7–9

***C. reticulata*.** Evergreen shrub or small tree. H to 30ft (10m), S 15ft (5m). Has large, broadly elliptic, leathery, dark green leaves. Large, single, rose-pink and salmon-red flowers are borne in spring. Larger blooms are produced under glass or in sheltered situations. The following are varieties of *C. reticulata*, or hybrids where *C. reticulata* is one of the parents. Z7–8.

'Arch of Triumph', H to 10ft (3m), is upright and vigorous, with very large, loose peony-form, orange-tinted, crimson-pink flowers. **'Black Lace'** see *C.* 'Black Lace'. **'Captain Rawes'** (illus. p.121) bears a profusion of large, semidouble, carmine-rose blooms. **'Dr. Clifford Parks'** has large, flame-red flowers, often semidouble, peony- and anemone-form on the same spreading shrub, in midspring. **'Francie L'** (syn. *C.* 'Francie L'), H 15ft (5m), S 20ft (6m), is vigorous with long, fan-shaped branches; bears large, semidouble, salmon-red to deep rose-red flowers from late winter to late spring; Z7–9. **'Harold L. Paige'**, H 6–12ft (2–4m), S 5–10ft (1.5–3m), is robust and reliable, bearing large, bright red, peony-form flowers on an upright, dense bush. **'Houye Diechi'** produces very large, semidouble, rose-pink flowers with wavy, central petals. **'Inspiration'** see *C.* 'Inspiration'. **'Lasca Beauty'**, H 12ft (4m), S 10ft (3m), is a strong, upright shrub, with large, semidouble, soft-pink flowers. **'Leonard Messel'** see *C.* 'Leonard Messel'. **'Mandalay Queen'** has large, semidouble, deep rose-pink flowers. **'Miss Tulare'**, H 12ft (4m), S 10ft (3m), is an upright, fairly dense shrub; bears large, bright red, peony-form flowers. **'Songzilin'**, H 20ft (6m), S 10ft (3m) as a shrub, H and S 28ft (9m) as a tree, is upright and has large, formal double, deep red flowers. **'William Hertrich'** (syn. *C.* 'William Hertrich') is a vigorous shrub, with very large, semidouble or loose peony-form, bright red, flowers; Z7–8.

***C. rosaeflora*.** Evergreen, spreading shrub. H and S 6ft (2m). Fine leaves are pale green and ovate. Small, single, rose-pink flowers are borne in spring. Z7–8

***C. saluenensis*.** Fast-growing, evergreen, bushy shrub. H to 12ft (4m), S to 8ft (2.5m). Has oblong to elliptic, stiff, dull green leaves. Single, white to rose-red flowers are freely produced in early spring. Some forms may withstand lower temperatures. Z7–8

***C. sasanqua*.** Fast-growing, evergreen, dense, upright shrub. H 10ft (3m), S 5ft (1.5m). Has oblong to elliptic, glossy, bright green leaves. In fall and early

winter, produces fragrant, usually single, white flowers; flowers may occasionally be pink or red. Does best in a hot, sunny site. Z7–8. **'Hugh Evans'**, H 10ft (3m), S 8ft (2.5m), is free-flowering, reliable, and vigorous, with an open, upright habit; can be trained against a wall. Single, rose-pink flowers are produced in winter. **'Jean May'** produces large, peony-form to double, pale pink flowers, from winter to early spring. **'Narumigata'**, H 15ft (5m), S 10ft (3m), has large, single, white flowers, sometimes pink-flushed. Often confused with *C. oleifera*. **'Shishigashira'**, H 6ft (2m), S 8ft (2.5m), is a slow-growing, dense, spreading bush, producing small, semidouble to loose peony-form, pale red flowers.

***C.* 'Shiro-wabisuke'.** Slow-growing, compact shrub. H 8ft (2.5m), S 5ft (1.5m). Has narrow, mid-green leaves. From midwinter to early spring, produces small, single, white flowers. Z7–8

***C.* 'Spring Festival'**, syn. *C. cuspidata* 'Spring Festival' (illus. p.121). Evergreen, upright shrub. H 6–12ft (2–4m), S 2–6ft (60cm–2m). Has elliptic, dark green leaves and miniature, semidouble, pink flowers, aging to pale pink, in midspring. Z7–8

***C. tsaii*.** Evergreen, bushy, vigorous shrub. H to 30ft (10m), S to 15ft (5m). Small, oblong-elliptic, light green leaves turn bronze with age. In spring, small, single, white flowers, the petals recurving with age, are borne from the leaf axils. Z7–8

***C.* x *vernalis*.** Fast-growing, evergreen, upright shrub. H to 10ft (3m), S 5ft (1.5m). Has oblong-elliptic, bright green leaves and, in late winter, bears fragrant, single, white, pink or red flowers. Some forms produce irregular double flowers. Z7–8

***C.* 'William Hertrich'.** See *C. reticulata* 'William Hertrich'.

***C.* x *williamsii* cultivars.** Evergreen shrubs, varying greatly in habit, leaves, and flowers. H 6–15ft (2–5m), S 3–10ft (1–3m). Flowers take various forms and sizes; most are in pink shades, with some white, one or two combined white and pink, and a very few with red blooms. Many start flowering in early spring and have long blooming seasons. Z7–8.

'Apple Blossom' is an open, upright bush, bearing single, sweet-scented flowers in white, shading to pale pink. **'Anticipation'**, H 12ft (4m), S 6ft (2m), is a robust, upright shrub. Has lance-shaped, dark green leaves and large, peony-form, deep rose-pink blooms, freely produced in spring. **'Bow Bells'**, H 12ft (4m), S 8ft (2.5m), has a spreading habit and small, mid-green leaves. In early spring, bears abundant, bell-shaped, single, rose-pink flowers with deeper pink centers and veins. **'Brigadoon'**, H 8ft (2.5m), S 3–10ft (1–3m), is a bushy shrub, bearing semidouble, rose-pink flowers with broad, down-curving petals. '**Debbie'** (illus. p.121) bears large, peony-form, rose-pink flowers. **'Donation'** (illus. p.121) is compact, upright and very free-flowering; bears large, semidouble, pink flowers from early to late spring. **'Dream Boat'** has a spreading habit and bears medium, formal double, pale purplish-pink flowers, with incurved petals, in midspring. **'E.G. Waterhouse'** illus. p.122. **'Elizabeth de Rothschild'** is vigorous and upright; semidouble, rose-pink flowers are produced amid glossy foliage. **'Elsie Jury'** has glossy, deep green leaves and bears large, full peony-form, clear pink flowers. **'Francis Hanger'**, H 5ft (1.5m), occasionally more, has an upright habit and produces single, white flowers with gold stamens. **'Freedom Bell'** (illus. p.121), H 6ft (2m), S 5ft (1.5m), is dense and rounded, with small, ovate, glossy, rich green leaves; bears semidouble, bright red flowers from late winter to early spring. **'Golden Spangles'** has unusual, variegated leaves, yellowish in the centers with dark green margins, and bears single, deep pink flowers. **'J.C. Williams'** (illus. p.120), H and S 10ft (3m), has a pendulous habit when mature and bears single, pink flowers from early winter to late spring. **'Joan Trehane'** has strong, upright growth and large, rose-form, rose-pink flowers. **'Jury's Yellow'** (illus. p.120) is dense and erect, bearing medium, anemone-form, white flowers, with centers of yellow petaloids. **'Ruby Wedding'** produces anemone- to peony-form, vivid red flowers, which are sometimes speckled white in the center. **'Saint Ewe'** has glossy, light green foliage and bears funnel-shaped, single, deep pink flowers.

'Water Lily' (illus. p.121) is an upright, vigorous cultivar with dark green leaves; bears formal double, mid-pink flowers with incurving petals in mid- to late spring. **'Wilber Foss'**, H and S to 6ft (2m), is rounded, with dark green foliage, and produces large, broad, peony-form, brilliant pink-red flowers.

CAMPANULA

Bellflower

CAMPANULACEAE

Genus of spring- and summer-flowering annuals, biennials, and perennials, some of which are evergreen. Grows in sun or shade, but delicate flower colors are preserved best in shade. Most forms prefer moist, but well-drained soil. Propagate by softwood or by basal cuttings in summer or by seed or division in fall or spring. Susceptible to attack by slugs; rust may be a problem in fall.

C. alliariifolia (Ivory bells; illus. p.241). Mound-forming perennial. H 2ft (60cm), S 20in (50cm). Has heart-shaped leaves, above which rise nodding, bell-shaped, creamy-white flowers borne on arching, wiry stems throughout summer. Z3–7

C. barbata (Bearded bellflower) illus. p.342.

***C. betulifolia*.** Prostrate, slender-stemmed perennial. H to 3in (8cm), S 12in (30cm). In summer, long, branching flower stems each carry a cluster of open bell-shaped, single, white to pink flowers, deep pink outside. Leaves are wedge-shaped. Z5–8

***C.* 'Birch Hybrid'** illus. p.368.

***C.* 'Burghaltii'.** Mound-forming perennial. H 2ft (60cm), S 12in (30cm). Leaves are ovate, soft, and leathery. In summer, bears long, pendent, funnel-shaped, pale lavender flowers on erect, wiry stems. May need staking. Z4–8

***C. carpatica*.** Clump-forming perennial. H to 12in (30cm), S 12–24in (30–60cm) or more. Leafy, branching stems bear rounded to ovate, toothed leaves and, in summer, broadly bell-shaped, blue or white flowers. Z4–7.

f. *alba* (syn. *C.c.* 'Bressingham White') illus. p.360. **'Bressingham White'** see *C.c.* f. *alba*. **var. turbinata** (syn. *C. turbinata*) bears pale lavender flowers.

var. *turbinata* 'Jewel' illus. p.367.

C. cochleariifolia, syn. *C. pusilla* (Fairy thimbles), illus. p.369.

***C. elatines* var. *garganica*.** See *C. garganica*.

***C.* 'Elizabeth'.** See *C. takesimana* 'Elizabeth'.

C. garganica, syn. *C. elatines* var. *garganica* (Adriatic bellflower). Spreading perennial. H and S 12in (30cm) or more. Has small, ivy-shaped leaves along stems. Bears clusters of star-shaped, single, pale lavender flowers from leaf axils in summer. Excellent for a wall or bank. Z4–7.

'W.H. Paine' has bright lavender-blue, white-eyed flowers.

***C.* 'G.F. Wilson'.** See *C.* x *pulloides* 'G.F. Wilson'.

***C. glomerata* 'Superba'** (illus. p.241). Vigorous, clump-forming perennial. H 30in (75cm), S 3ft (1m) or more. Has dense, rounded heads of large, bell-shaped, purple flowers borne in summer. Bears ovate leaves in basal rosettes and on flower stems. Must be divided and replanted regularly. Z3–8

***C.* x *haylodgensis*.** See *C.* x *haylodgensis* 'Plena'. **'Plena'** (syn. *C.* x *haylodgensis*) is a spreading perennial. H 2in (5cm), S 8in (20cm). Has small, heart-shaped leaves and, in summer, pomponlike, double, deep lavender-blue flowers. Suitable for a rock garden or wall. Z5–8

C. isophylla (Falling stars, Italian bellflower). Evergreen, dwarf, trailing perennial. H 4in (10cm), S 12in (30cm). Star-shaped, blue or white flowers are borne in summer above small, heart-shaped, toothed leaves. Ideal for hanging baskets. Z13–15

***C.* 'Joe Elliott'.** Mound-forming perennial. H 3in (8cm), S 5in (12cm). Large, funnel-shaped, mid-lavender-blue flowers almost obscure the small, heart-shaped, downy, gray-green leaves in summer. Good for an alpine house, trough, or rock garden. Needs well-drained, alkaline soil. Protect from winter wet. Prone to slug attack. Z5–8

***C.* 'Kent Belle'.** Sturdy, spreading, but clump-forming perennial. H 28in (70cm), S 45cm 18in or more. Has rounded, toothed, glossy, mid-green leaves. In summer, produces large, pendent, bell-shaped, violet-blue flowers. Z5–9

***C. lactiflora*.** Upright, branching perennial. H 4ft (1.2m), S 2ft (60cm). In summer, slender stems bear racemes of large, nodding, bell-shaped, blue, occasionally pink or white flowers. Leaves are narrowly ovate. Needs staking on a windy site. Z5–7. **'Loddon Anna'** (illus. p.241) has soft dusty-pink flowers.

'Prichard's Variety' (illus. p.241), H to 30in (75cm), has violet-blue flowers from early summer to late fall.

***C. latifolia* 'Amethyst'.** Clump-forming, spreading perennial. H 36–39in (90–100cm), S 2ft (60cm). Strong stems are clothed with large, open bell-shaped, pastel amethyst-blue flowers in summer. Ovate, toothed leaves are rough-textured. Z5–9.

'Brantwood', H 30in (75cm), produces violet-purple flowers.

***C. latiloba*.** Rosette-forming perennial. H 3ft (1m), S 1½ft (45cm). Leaves are ovate. Widely cup-shaped flowers, in shades of blue, occasionally white, are borne in summer. Z5–7. **'Hidcote Amethyst'** has large, vivid violet-blue flowers with purple highlights. **'Percy Piper'**, H 30in (75cm), has lavender flowers.

C. medium (Canterbury bells). Slow-growing, evergreen, erect, clump-forming biennial. Tall cultivars, H 3ft (1m), S 1ft (30cm); dwarf, H 2ft (60cm), S 1ft (30cm). All have lance-shaped, toothed, fresh green leaves. In spring and early summer, cultivars bear bell-shaped, single or double flowers, in white, blue or pink. Z5–8.

'Bells of Holland' illus. p.313.

***C. morettiana*.** Tuft-forming perennial. H 1in (25cm), S 3in (7cm). Leaves are ivy-shaped with fine hairs. Arching flower stems each carry a solitary, erect, bell-shaped, violet-blue flower in late spring and early summer. Needs gritty, alkaline soil and a dry, but not arid winter climate. Red spider mite may be troublesome. Z5–7

***C. muralis*.** See *C. portenschlagiana*.

C. pendula, syn. *Symphyandra pendula*. Arching perennial. H 1–2ft (30–60cm), S 1ft (30cm). Produces panicles of pendent, bell-shaped, cream flowers in summer. Has ovate, hairy, pale green leaves. Becomes woody at base with age. Z5–8

***C. persicifolia*.** Rosette-forming, spreading perennial. H 3ft (1m), S 12in (30cm). In summer, nodding, bell-shaped, papery, white or blue flowers are borne above narrowly lance-shaped, bright green leaves. Z3–8. **'Chettle Charm'** (illus. p.241), H 2ft (60cm), bears large, white flowers with violet-blue margins.

'Fleur de Neige' has double, white flowers.

'Pride of Exmouth' bears double, powder-blue flowers. **'Telham Beauty'** illus. p.242.

C. portenschlagiana, syn. *C. muralis* (Dalmatian bellflower), illus. p.368.

'Lieselotte' is an evergreen, compact perennial. H 6in (15cm), S indefinite. Produces dense mats of small, ivy-shaped, mid-green leaves and large clusters of open bell-shaped, pale violet-blue flowers in summer. **'Resholdt's Variety'** has deep violet-blue flowers. Z4–7

C. poscharskyana illus. p.367.

'Lisduggan Variety' is a vigorous, spreading perennial. H 4–6in (10–15cm), S to 2ft (60cm). Mid-green leaves are round with serrated edges. Produces star-shaped, lavender-pink flowers on leafy stems in summer. Underground runners make it suitable for a bank or wild garden.

'Stella' has bright violet flowers. Z3–9

***C. pulla*.** Often short-lived perennial that spreads by underground runners. H 1in (25cm), S 4in (10cm). Tiny, rounded leaves form ½in (1cm) wide rosettes, each bearing a flower stem with a solitary, pendent, bell-shaped, deep violet flower from late spring to early summer. Good for a scree or rock garden. Needs gritty, alkaline soil that is not too dry. Slugs may prove troublesome. Z5–7

***C.* x *pulloides* 'G.F. Wilson'**, syn. *C.* 'G.F. Wilson', illus. p.368.

***C. punctata*.** Vigorous, clump-forming, but spreading perennial. H 16in (40cm), S 2ft (60cm) or more. Has heart-shaped, light green, basal leaves. In summer, tall

flowering stems bear sprays of pendent, tubular, dusky-pink flushed, creamy-white flowers. Z4–8. **'Alina's Double'**, H 12in (30cm), has large, "hose-in-hose," double, rich pink flowers. **f. *rubriflora* 'Cherry Bells'** (illus. p.241), H 20in (50cm), bears cream-tipped, rose-pink flowers. **'Wine 'n' Rubies'**, H 12in (30cm), has dark green leaves and bears large, rich purple-red flowers, with heavily speckled interiors, in midsummer.

***C.* 'Purple Sensation'.** Clump-forming perennial. H 16in (40cm), S 12in (30cm) or more. Has ovate, dark green leaves. Bears pendent, tubular, deep violet-black flowers in summer. Z5–9

C. pusilla. See *C. cochleariifolia*.

C. pyramidalis (Chimney bellflower). Erect, branching perennial, grown as a biennial. H 6ft (2m), S 2ft (60cm). Produces long racemes of star-shaped, blue or white flowers in summer. Leaves are heart-shaped. Needs staking. Z6–8

C. raineri. Perennial that spreads by underground runners. H 1½in (4cm), S 3in (8cm). Leaves are ovate, toothed, and gray-green. Flower stems each bear a large, upturned, bell-shaped, pale lavender flower in summer. Suitable for an alpine house or a trough that is protected from winter wet. Requires semishade. Z5–7

C. takesimana (illus. p.241). Vigorous, spreading perennial. H 30in (75cm), S 3ft (1m). Forms rosettes of heart-shaped, glossy, mid-green leaves. In summer and fall, flowering stems bear pendent, tubular to bell-shaped, ivory-white flowers with red speckled interiors. Best in a sunny site. Z5–7. **'Elizabeth'** (syn. *C.* 'Elizabeth'), H 14–16in (35–40cm), S 16in (40cm), produces cream flowers flushed reddish-purple outside and spotted red inside.

C. trachelium (Nettle-leaved bellflower). Upright perennial. H 2–3ft (60–100cm), S 1ft (30cm). Has rough, serrated, ovate, pointed, basal leaves. Wide, bell-shaped, white, blue or purple-blue flowers are spaced along erect stems in summer. Z5–8. **'Bernice'** (illus. p.241) has double purple-violet flowers.

C. vidalii. See *Azorina vidalii*.

C. wanneri, syn. *Symphyandra wanneri*, illus. p.342.

C. zoysii. Tuft-forming perennial. H 2in (5cm), S 4in (10cm). Has tiny, rounded, glossy green leaves. In summer, flower stems each bear a bottle-shaped, lavender flower held horizontally. Needs gritty, alkaline soil. Difficult to grow and encourage to flower; dislikes winter wet; and is prone to slug attack. Z5–7

CAMPSIS

Trumpet creeper, Trumpet vine

BIGNONIACEAE

Genus of deciduous, woody-stemmed, root climbers, grown for their flowers. , Where marginally hardy, benefits from protection of a sunny wall. Grow in sun in fertile, well-drained soil, and water regularly in summer. Prune in spring. Propagate by semiripe cuttings in summer or by layering in winter.

C. chinensis. See *C. grandiflora*.

C. grandiflora, syn. *Bignonia grandiflora, Campsis chinensis, Tecoma grandiflora*, illus. p.203.

C. radicans, syn. *Bignonia radicans, Tecoma radicans* (Common trumpet creeper). Deciduous, woody-stemmed, root climber. H to 40ft (12m). Leaves of 7–11 ovate, toothed leaflets are downy beneath. Small clusters of trumpet-shaped, orange, scarlet or yellow flowers, 2½–3in (6–8cm) long, open in late summer and early fall. Z5–9. **'Flamenco'** illus. p.208. **f. *flava*** (syn. *C.r.* 'Yellow Trumpet') illus. p.206. **'Indian Summer'** illus. p.193. **'Yellow Trumpet'** see *C.r.* f. *flava*.

***C.* x *tagliabuana* 'Madame Galen'** illus. p.208.

CANARINA

CAMPANULACEAE

Genus of herbaceous, tuberous, scrambling climbers, grown for their flowers. Grow in full light and in any fertile, well-drained soil. Water moderately from early fall to late spring, then keep dry. Needs tying to a support. Remove dead stems when dormant. Propagate by basal cuttings or by seed in spring or fall.

C. campanula. See *C. canariensis*.

C. canariensis, syn. *C. campanula* (Canary Island bellflower), illus. p.464.

Candollea cuneiformis. See *Hibbertia cuneiformis*.

CANNA

Indian shot plant

CANNACEAE

Genus of robust, showy, rhizomatous perennials, grown for their striking flowers and ornamental foliage. Generally used for summer-bedding displays and containers. Needs a warm, sunny position and humus-rich, moist soil. If grown under glass or for summer bedding, prompt into growth in spring at 16°C (61°F) and store rhizomes in slightly damp soil in winter. Propagate in spring by division or in winter by seed sown at min. 20°C (68°F) .

***C.* 'Annaeei'.** Very tall, rhizomatous perennial. H 8ft (2.5m), S 2–3ft (60–100cm). Glaucous, bluish-green leaves and small, pale orange flowers from late summer to early fall. Z7–11

***C.* 'Durban'.** See *C.* 'Phasion'.

C.* x *ehemanii, syn. *C. iridiflora* 'Ehemanii' (illus. p.394). Midsummer- to early fall-flowering, rhizomatous perennial. H 6ft (2m), S 2ft (60cm). Broadly elliptical, dark bluish-green leaves have red margins. Produces trumpet-shaped, bright pinkish-red flowers. Z7–11

***C.* 'Erebus'.** Erect, rhizomatous perennial. H to 6ft (2m), S 20in (50cm). Has glaucous green leaves. From midsummer to early fall, bears spikes of gladioluslike, dark red flowers. Can be grown in up to 8in (20cm) of water or in damp garden soil. Z7–11

***C.* 'General Eisenhower'.** Rhizomatous, upright perennial. H to 4½ft (1.4m), S 20in (50cm). Has large, olive-green leaves heavily flushed reddish-bronze. From midsummer to early fall, produces spikes of deep orange flowers. Z7–11

***C. indica* 'Russian Red'** is a midsummer- to early fall-flowering rhizomatous perennial. H 5–6ft (1.5–2m), S 20in (50cm). Produces large, ovate or lance-shaped to oblong, reddish-bronze tinted leaves and irislike, pink-flushed, orange flowers. Z7–11

***C. iridiflora* 'Ehemanii'.** See *C.* x *ehemannii*.

***C.* 'King Midas'.** See *C.* 'Richard Wallace'.

***C.* 'Königin Charlotte'**, syn. *C.* 'Queen Charlotte' (illus. p.394). Midsummer- to early fall-flowering, rhizomatous perennial. H 3–4ft (1–1.2m), S 20in (50cm). Has broadly lance-shaped, mid-green leaves. From midsummer to early fall, produces velvety, blood-red flowers, the petals with canary-yellow margins. Z9–11

***C.* 'Louis Cayeux'.** Midsummer- to early fall-flowering, rhizomatous perennial. H to 5ft (1.5m), S 20in (50cm). Has bright green leaves and racemes of orchidlike, soft salmon-pink flowers. Z7–11

***C.* 'Louis Cottin'** (illus. p.394). Midsummer- to early fall-flowering, rhizomatous perennial. H 4ft (1.2m), S 1½ft (50cm). Produces trumpet-shaped, apricot flowers and broadly lance-shaped, dark blackish-green leaves. Z9–11

***C.* 'Musifolia'.** Midsummer- to early fall-flowering, rhizomatous perennial. H 10ft (3m), S 5ft (1.5m). Very long, ovate, mid-green leaves have dark margins and red-tinted midribs. Bears small, irislike, orange flowers. Z9–11

***C.* 'Phasion'**, syn. *C.* 'Durban', *C.* 'Tropicanna', illus. p.395.

***C.* 'Picasso'** (illus. p.394). Midsummer-to early fall-flowering, rhizomatous perennial. H 4ft (1.2m), S 20in (50cm). Produces gladioluslike, yellow flowers with orange and red spots. Has large, broadly ovate, blue-green leaves. Z9–11

***C.* 'Pretoria'.** See *C.* 'Striata'.

***C.* 'Queen Charlotte'.** See *C.* 'Königin Charlotte'.

***C.* 'Ra'** (illus. p.394). Midsummer- to early fall-flowering marginal aquatic. H to 6ft (1.8m), S 32in (80cm). Produces erect stems bearing narrow, glaucous green leaves and racemes of bright yellow flowers, to 3in (8cm) across. Can be grown in normal soil if kept moist in summer. Z7–11

***C.* 'Richard Wallace'**, syn. *C.* 'King Midas' (illus. p.394). Midsummer- to early fall-flowering, rhizomatous perennial. H 5ft (1.5m), S 20in (50cm). Produces elliptic, apple-green leaves and gladioluslike, bright yellow flowers, with spotted throats and frilly-edged petals. Z7–11

***C.* 'Shenandoah'.** Clump-forming, rhizomatous perennial H 5½ft (1.6m), S 20in (50cm). Has heavily bronzed, dark, olive-green leaves, purple stems. Bears bright-pink flowers from early summer to early fall. Z7–11

***C.* 'Striata'**, syn. *C.* 'Pretoria' (illus. p.394). Midsummer- to early fall-flowering, rhizomatous perennial. H 5ft (1.5m), S 20in (50cm). Gladioluslike, bright orange flowers are borne above ovate, light green to yellow-green leaves, with bright yellow veins. Z9–11

***C.* 'Stuttgart'** (illus. p.394). Midsummer-to early fall-flowering, rhizomatous perennial. H 7ft (2m), S 2ft (60cm). Produces small, irislike, pale apricot flowers, fading to pink. Broadly lance-shaped, white-and-green leaves require some shade to prevent burning. Z9–11

***C.* 'Tropicanna'.** See *C.* 'Phasion'.

***C.* 'Whithelm Pride'** (illus. p.394). Midsummer- to early-fall-flowering, rhizomatous perennial. H 3ft (1m), S 20in (50cm). Produces large, gladioluslike, pink flowers and has ovate, bronze leaves. Z9–11

***C.* 'Wyoming'** (illus. p.394). Midsummer-to early fall-flowering, rhizomatous perennial. H to 6ft (1.8m), S 20in (50cm). Leaves are brown-purple with darker purple veins. Bears racemes of gladiolus-like, frilled orange flowers, 4in (10cm) across, with apricot feathering and darker orange margins. Z7–11

CANTUA

POLEMONIACEAE

Genus of evergreen shrubs and small trees, grown for their showy flowers borne in spring. Only one species is in general cultivation. Best grown against a warm, sunny wall. Requires full sun and fertile, well-drained soil. Propagate by semiripe cuttings in summer.

C. buxifolia, syn. *C. dependens*, illus. p.146.

C. dependens. See *C. buxifolia*.

CAPSICUM

Chilli pepper, Pepper

SOLANACEAE

Genus of erect or spreading, many-branched annuals and perennials. Some species produce edible fruits (eg. sweet peppers), others small, ornamental ones. Grow in sun and in fertile, well-drained soil. Spray flowers with water to encourage fruits to set. Propagate by seed sown under glass in spring. Red spider mite may cause problems.

***C. annuum* 'Holiday Cheer'.** Moderately fast-growing, evergreen, bushy perennial, grown as an annual. H and S 8–12in (20–30cm). Has ovate, mid-green leaves. Bears small, star-shaped, white flowers in summer and, in fall to winter, round, green fruits that mature to red. Z10–11 (min. 39°F/4°C)

CARAGANA

PAPILIONACEAE/LEGUMINOSAE

Genus of deciduous shrubs or small trees, grown for their attractive foliage and pealike flowers, which are followed by slender, brown pods. Requires full sun and fertile, but not over-rich, well-drained soil. Propagate species by softwood cuttings in summer or by seed in fall; cultivars by softwood or semiripe cuttings or budding in summer or by grafting in winter.

C. arborescens (Pea tree). Fast-growing, deciduous, upright shrub. H 20ft (6m), S 12ft (4m). Has spine-tipped, dark green leaves, each composed of 8–12 oblong leaflets. Bears clusters of pealike, yellow flowers in late spring. Z2–7. Arching **'Lorbergii'**, H 10ft (3m), S 8ft (2.5m), has very narrow leaflets and smaller flowers and is often grown as a tree by top-grafting. **'Nana'** illus. p.148. **'Walker'**, H 1ft (30cm), S 6–10ft (2–3m), is prostrate but is usually top-grafted to form a weeping tree, H 6ft (2m), S 2½ft (75cm).

CARALLUMA

APOCYNACEAE

Genus of perennial succulents with 4–6-ribbed, fingerlike, blue-gray or blue-green to purple stems. Needs sun and extremely well-drained soil. Water sparingly, only in the growing season. May be difficult to grow. Propagate by seed or stem cuttings in summer.

C. europaea, syn. *Stapelia europaea*. Clump-forming, perennial succulent. H 8in (20cm), S 3ft (1m). Rough, 4-angled, erect to procumbent, gray stems often arch over and root. Has clusters of small, star-shaped, yellow and brownish-purple flowers near stem crown from mid- to late summer, then twin-horned, gray seed pods. Flowers smell faintly of rotten meat. One of the easier species to grow. Z11–12 (min. 50°F/10°C)

C. joannis illus. p.494.

CARDAMINE

Bitter cress

BRASSICACEAE/CRUCIFERAE

Genus of spring-flowering annuals and perennials. Some are weeds, but others are suitable for informal and woodland gardens. Requires sun or semishade and moist soil. Propagate by seed or by division in fall.

C. enneaphylla, syn. *Dentaria enneaphylla*. Lax perennial spreading by fleshy, horizontal rootstocks. H 12–24in (30–60cm), S 18–24in (45–60cm). In spring, nodding, pale yellow or white flowers open at the ends of shoots arising from deeply divided leaves. Z7–9

C. latifolia. See *C. raphanifolia*.

C. pentaphylla, syn. *Dentaria digitata, Dentaria pentaphylla*, illus. p.260.

C. pratensis (Cuckoo flower, Lady's smock) illus p.438. **'Flore Pleno'** is a neat, clump-forming perennial. H 8in (20cm), S 12in (30cm). Divided, mid-green leaves have rounded leaflets. Bears dense sheaves of double, lilac flowers in spring. May be propagated by leaf-tip cuttings in mid-summer. Prefers a moist or wet site. Z4–8

C. raphanifolia, syn. *C. latifolia*, illus. p.438.

C. trifolia illus. p.348.

CARDIOCRINUM

Giant lily

LILIACEAE

Genus of summer-flowering, lilylike bulbs, grown for their spectacular flowers and attractive, heart-shaped, veined leaves. Needs partial shade and deep, humus-rich, moist soil. Plant bulbs just below soil surface, in fall. Water well in summer and mulch with humus. Provide a deep mulch in winter. After flowering, main bulb dies, but produces offsets. To produce flowers in up to 5 years, propagate by offsets in fall; may also be propagated by seed in fall or winter and will then flower in 7 years.

C. giganteum (Giant lily) illus. p.385. **var. *yunnanense*** is a sturdy, leafy-stemmed bulb. H 5–6ft (1.5–2m), S 2½–3ft (75–100cm). Has bold, heart-shaped, bronze-green leaves. Produces long spikes of fragrant, pendent, trumpet-shaped, cream flowers, 6in (15cm) long, with purple-red streaks inside and often tinted green, in summer. Decorative seed heads follow. Z7–9

CARDIOSPERMUM

Heart seed

SAPINDACEAE

Genus of evergreen, perennial, woody-stemmed tendril climbers, grown mainly for their attractive fruits. Useful for covering bushes or trellises. Grow in full light and any soil. Propagate by seed in spring.

C. halicacabum (Balloon vine, Heart pea, Love-in-a-puff, Winter cherry). Perennial, tendril climber, usually grown as an annual or biennial. H to 10ft (3m). Has toothed leaves of 2 oblong leaflets. Inconspicuous, whitish flowers are produced in summer, followed by downy, spherical, inflated, 3-angled, straw-colored fruits containing black seeds, each with a heart-shaped, white spot. Z10–12 (min. 45–50°F/7–10°C)

CAREX

Sedge

CYPERACEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.

C. buchananii (Leatherleaf sedge). Evergreen, tuft-forming, perennial sedge. H to 2ft (60cm), S 8in (20cm). Very narrow, copper-colored leaves turn red toward base. Solid, triangular stems bear tiny, brown spikelets in summer. Z6–9

***C. elata* 'Aurea'** (Bowles's golden sedge) illus. p.445.

C. flagellifera illus. p.289.

C. grayi (Mace sedge). Evergreen, tuft-forming, perennial sedge. H to 2ft (60cm), S 8in (20cm). Has bright green leaves. Large, female spikelets, borne in summer, mature to pointed, knobbly, greenish-brown fruits. Z5–9

***C. hachijoensis* 'Evergold'.** See *C. oshimensis* 'Evergold'.

C. morrowii of gardens. See *C. oshimensis*.

C. oshimensis, syn. *C. morrowii* of gardens. Evergreen, tuft-forming, perennial sedge. H 8–20in (20–50cm), S 8–10in (20–25cm). Has narrow, mid-green leaves. Solid, triangular stems bear insignificant spikelets in summer. Z5–9. **'Evergold'** (syn. *C. hachijoensis* 'Evergold') illus. p.288.

C. pendula (Pendulous sedge). Evergreen, tuft-forming, graceful perennial. H 3ft (1m), S 1ft (30cm). Has narrow, green leaves, 18in (45cm) long. Solid, triangular stems freely produce pendent, greenish-brown flower spikes in summer. Z5–9

CARISSA

APOCYNACEAE

Genus of evergreen, spring- to summer-flowering shrubs and small trees, grown for their flowers and overall appearance. Mostly Needs partial shade and well-drained soil. Water containerized specimens moderately, less when temperatures are low. Propagate by seed when ripe or in spring or by semiripe cuttings in summer. ⓘ Seeds are poisonous.

C. grandiflora. See *C. macrocarpa*.

C. macrocarpa, syn. *C. grandiflora* (Natal plum). **'Tuttlei'** illus. p.453.

C. spectabilis. See *Acokanthera oblongifolia*.

CARLINA

ASTERACEAE/COMPOSITAE

Genus of annuals and perennials, grown for their ornamental flower heads, which in most species are good for drying. Requires a sunny position and well-drained soil. Propagate by seed: annuals in spring, perennials in fall.

C. acaulis (Alpine thistle) illus. p.361.

CARMICHAELIA

SYN. CHORDOSPARTIUM, NOTOSPARTIUM

PAPILIONACEAE/LEGUMINOSAE

Genus of deciduous shrubs, occasionally small trees, grown for their profusion of tiny flowers in summer. Flattened, green shoots assume function of leaves. Needs full sun and well-drained soil. Cut out dead wood in spring. Propagate by semiripe cuttings in summer or by seed in fall or spring.

C. carmichaeliae, syn. *Notospartium carmichaeliae* (Pink broom). Leafless, arching shrub. H 6ft (2m), S 5ft (1.5m). In midsummer, bears short, dense spikes of pealike, purple-blotched, pink flowers on slender, drooping, green shoots. Z8–10

C. enysii. Deciduous, mound-forming, dense shrub. H and S 1ft (30cm). Shoots are rigid. Pealike, violet flowers are produced in midsummer. Best grown in a rock garden. Z8–10

C. stevensonii, syn. *Chordospartium stevensonii* (Weeping broom). Deciduous, almost leafless, arching shrub or small tree. H 10ft (3m), S 6ft (2m). Produces small, pealike, purplish-pink flowers in cylindrical racemes in midsummer. Z8–10

CARNEGIEA

CACTACEAE

Genus of one species of very slow-growing, perennial cactus with thick, 12–24-ribbed, spiny stems. Unlikely to flower or branch at less than 12ft (4m) high. Requires full sun and very well-drained soil. Propagate by seed in spring or summer.

C. gigantea (Saguaro cactus) illus. p.492.

CARPENTERIA

HYDRANGEACEAE

Genus of one species of evergreen shrub, cultivated for its flowers and foliage. Grows well against a warm, sunny wall. Prefers full sun and fairly moist, but well-drained soil. Propagate by seed in fall or by greenwood or semiripe cuttings in summer.

C. californica illus. p.197.

CARPINUS

Hornbeam

BETULACEAE

Genus of deciduous trees, grown for their foliage, fall color and clusters of small, winged nuts. Needs sun or semishade and fertile, well-drained soil. Propagate species by seed in fall, cultivars by budding in late summer.

C. betulus (Common hornbeam). Deciduous, round-headed tree. H 80ft (25m), S 70ft (20m). Has a fluted trunk and ovate, prominently veined, dark green leaves that turn yellow and orange in fall. Bears green catkins from late spring to fall, when clusters of winged nuts are borne. Z5–7. **'Fastigiata'** (syn. *C.b.* 'Pyramidalis') illus. p.93. **'Pyramidalis'** see *C.b.* 'Fastigiata'.

C. caroliniana (American hornbeam). Deciduous, spreading tree with branches that droop at tips. H and S 30ft (10m). Has a fluted, gray trunk, green catkins in spring, and ovate, bright green leaves that turn orange and red in fall, when clusters of winged nuts are borne. Z5–7

C. turczaninowii. Deciduous, spreading tree of graceful habit. H 40ft (12m), S 30ft (10m). Green catkins are borne in spring. Produces clusters of small, winged nuts in fall, when the small, ovate, glossy, deep green leaves turn orange. Z5–7

CARPOBROTUS

AIZOACEAE

Genus of mat-forming, perennial succulents with triangular, fleshy, dark green leaves and daisylike flowers. Excellent for binding sandy soils. Needs full sun and well-drained soil. Propagate by seed or by stem cuttings in spring or summer.

C. edulis (Hottentot fig, Kaffir fig). Carpeting, perennial succulent. H 6in (15cm), S indefinite. Prostrate, rooting branches bear leaves ⅝in (1.5cm) thick and 5in (12cm) long. Yellow flowers, 5in (12cm) across, open in spring–summer from about noon in sun. Bears edible, figlike, brownish fruits in late summer and fall. Z10–11 (min. 41°F/5°C)

CARTHAMUS

ASTERACEAE/COMPOSITEAE

Genus of upright, hairy annuals and herbaceous perennials. *C. tinctorius* has been used for centuries as a source of red and yellow dye. Grow in full sun in any light, well-drained soil. Flower heads are good for dried arrangements. Excellent in a border or herb garden. Propagate by seed in spring.

C. tinctorius (False saffron) illus. p.323.

CARYA

Hickory

JUGLANDACEAE

Genus of deciduous trees, grown for their stately habit, divided leaves, fall color and, in some cases, edible nuts. Has insignificant flowers in spring. Requires sun or semishade and deep, fertile soil. Plant young seedlings in a permanent position during their first year since older plants resent transplanting. Propagate by seed in fall.

C. cordiformis (Bitternut, Bitternut hickory). Vigorous, deciduous, spreading tree. H 80ft (25m), S 50ft (15m). Bark is smooth at first, later fissured. Bright yellow, winter leaf buds develop into large, dark green leaves, with 5 to 9 ovate to oblong leaflets; these turn yellow in fall.

Nuts are pear-shaped or rounded, ¾–1½in (2–4cm) long, each with a bitter kernel. Z4–9
C. glabra (Hognut, Pignut, Pignut hickory). Deciduous, spreading tree. H 80ft (25m), S 70ft (20m). Dark green leaves, with usually 5 narrowly ovate leaflets, turn bright yellow and orange in fall. Pear-shaped or rounded nuts, ¾–1½in (2–4cm) long, each have a bitter kernel. Z4–9
C. ovata (Shag-bark hickory) illus. p.67.

CARYOPTERIS

LAMIACEAE

Genus of deciduous shrubs and perennials, grown for their foliage and small, but freely borne, blue flowers. Prefers full sun and light, well-drained soil. Cut back hard in spring. Propagate species by greenwood or semiripe cuttings in summer or by seed in fall; propagate cultivars by cuttings only, in summer.
***C.* x *clandonensis* cultivars.** Dense, mound-forming shrubs. H 3ft (1m), S 5ft (1.5m). Have ovate to lance-shaped, slightly toothed, gray-green leaves, with silver-hairy undersides. Bear clusters of blue or purple-blue flowers in late summer and early fall. Z5–9. **'First Choice'** is compact, with dark reddish stems and deep, ink-blue buds, opening to large, long-lasting, rich blue flowers; the fruiting calyx is very dark blue. **'Heavenly Blue'** is erect, with intensely dark blue flowers. **Sterling Silver ('Lissilv')** is compact, with silvery-gray leaves and dark, violet-blue flowers in late summer. **'Summer Sorbet'** is spreading, with elliptic leaves, edged with golden yellow; bears fluffy clusters of pale blue flowers in late summer. **'Worcester Gold'** has warm yellow foliage and lavender-blue flowers.
C. incana, syn. *C. mastacanthus*. Deciduous, bushy subshrub. H and S 4ft (1.2m). Bears tubular, violet-blue flowers, with prominent stamens, amid lance-shaped, gray-green leaves from late summer to early fall. Z5–9
***C. mastacanthus*.** See *C. incana*.

***Cassandra*.** See *Chamaedaphne*.

CASSIA

CAESALPINIACEAE/LEGUMINOSAE

Genus of annuals, perennials, and evergreen, semievergreen, or deciduous trees and shrubs, grown for their flowers mainly produced from winter to summer. Needs full light and fertile, well-drained soil. Water containerized specimens freely when in full growth, moderately to sparingly in winter. Pruning is tolerated, severe if necessary, but trees are best left to grow naturally. Propagate by seed in spring.
***C. artemisioides*.** See *Senna artemisioides*.
***C. corymbosa*.** See *Senna corymbosa*.
var. *plurijuga* see *Senna* x *floribunda*.
***C. didymobotrya*.** See *Senna didymobotrya*.
C. fistula (Golden shower, Indian laburnum, Pudding pipe-tree). Fast-growing, semievergreen to deciduous, ovoid tree. H 25–30ft (8–10m), S 12–20ft (4–6m). Has 12–18in (30–45cm) long leaves, each with 4–8 pairs of ovate leaflets, coppery when young. In spring, produces racemes of small, fragrant, 5-petaled, cup-shaped, bright yellow flowers. Cylindrical, dark brown pods, to 2ft (60cm) long, yield cassia pulp. Z12 (min. 59°F/15°C)
***C.* x *floribunda*.** See *Senna* x *floribunda*.
***C. siamea*.** See *Senna siamea*.

CASSINIA

ASTERACEAE/COMPOSITAE

Genus of heatherlike evergreen shrubs, grown for their foliage and flowers. Avoid cold, exposed positions. Needs full sun and fertile, well-drained soil. Propagate by softwood cuttings in summer.
***C. fulvida*.** See *C. leptophylla* subsp. *fulvida*.
C. leptophylla* subsp. *fulvida, syn. *C. fulvida*. Evergreen, bushy shrub. H and S 6ft (2m). Has yellow shoots, small, oblong, dark green leaves and, in midsummer, clustered heads of minute, white flowers. Z7–10. **subsp. *vauvilliersii*** (syn. *C. vauvilliersii*) illus. p.150.
***C. vauvilliersii*.** See *C. leptophylla* subsp. *vauvilliersii*.

CASSIOPE

ERICACEAE

Genus of dwarf, evergreen, spring-flowering shrubs, suitable for a rock garden, bank or wall. Needs a sheltered, shaded or semishaded site and moist, peaty, acidic soil. Propagate by semiripe or greenwood cuttings in summer or by seed in fall or spring.
***C.* 'Edinburgh'.** Evergreen, dwarf shrub. H and S 8in (20cm). Has tiny, dark green leaves tightly pressed to upright stems. In spring, many small, bell-shaped, white flowers are borne singly in leaf axils. Z3–7
***C. fastigiata*.** Evergreen, upright, loose shrub. H 12in (30cm), S 6–8in (15–20cm). In spring, bell-shaped, creamy-white flowers, resting in green or red calyces, are borne on short stalks in leaf axils. Leaves are tiny and scalelike. Needs semishade. Z3–7
C. lycopodioides illus. p.349.
C. mertensiana illus. p.349.
***C.* 'Muirhead'** illus. p.332.
***C. selaginoides*.** Evergreen, spreading shrub. H 10in (25cm), S 6in (15cm). Stem is hidden by dense, scalelike, mid-green leaves. Bears solitary, relatively large, pendent, bell-shaped, white flowers in spring. Needs a shaded site. Z3-7
C. tetragona illus. p.332.
***C. wardii*.** Evergreen, upright to spreading, loose shrub. H 6in (15cm), S 8in (20cm). Semiupright stems are densely clothed with scalelike, dark green leaves that give them a square appearance. Bell-shaped, white flowers, set close to stems, open in spring. Needs shade in all but cool areas. May also be propagated by division of runners in spring. Z3–7

CASTANEA

Chestnut, Sweet chestnut

FAGACEAE

Genus of deciduous, summer-flowering trees and shrubs, grown for their foliage, stately habit, flowers, and edible fruits (chestnuts). Requires sun or semishade; does particularly well in hot, dry areas. Needs fertile, well-drained soil; grows poorly on shallow, chalky soil. Propagate species by seed in fall, cultivars by budding in summer or by grafting in late winter.
C. sativa (Spanish chestnut, Sweet chestnut). Deciduous, spreading tree. H 100ft (30m), S 50ft (15m). Bark becomes spirally ridged with age. Oblong, glossy, dark green leaves turn yellow in fall. Produces spikes of small, creamy-yellow flowers in summer, followed by edible fruits in rounded, spiny husks. Z5–7.
'Albomarginata' (syn. *C.s.* 'Argenteovariegata') illus. p.61.

CASTANOSPERMUM

PAPILIONACEAE/LEGUMINOSAE

Genus of evergreen trees, grown for their overall ornamental appearance and, in warmer areas, for shade. Requires full light and fertile, moisture-retentive, but well-drained soil. Water containerized specimens freely when in full growth, moderately at other times. Propagate by seed in spring.
C. australe (Black bean tree, Moreton Bay chestnut). Strong-growing, evergreen, rounded tree. H 50ft (15m) or more, S 25ft (8m) or more. Has 18in (45cm) long leaves of 9–17 ovate leaflets. Racemes of large, pealike, yellow flowers, that age to orange and red, are produced in fall, but only on mature trees, and are succeeded by cylindrical, reddish-brown pods, each 10in (25cm) long, containing large, chestnutlike seeds. Z10–11

CATALPA

BIGNONIACEAE

Genus of deciduous, summer-flowering trees, extremely resistant to urban pollution, grown for their foliage and bell- or trumpet-shaped flowers with frilly lobes. Trees are best grown as isolated specimens. Prefers full sun and does best in hot summers. Needs deep, fertile, well-drained, but not too dry soil. Propagate species by seed in fall, cultivars by softwood cuttings in summer or by budding in late summer.
C. bignonioides (Indian bean tree) illus. p.73. **'Aurea'** illus. p.76.
C. bungei, syn. *C. fargesii* f. *duclouxii*, illus. p.73.
***C.* x *erubescens* 'Purpurea'**, syn. *C. bignonioides* 'Purpurea'. Deciduous, spreading tree. H and S 50ft (15m). Broadly ovate or 3-lobed, very dark purple, young leaves age to dark green. Fragrant, bell-shaped, white flowers, marked yellow and purple, open from mid- to late summer. Z4–8
C. fargesii* f. *duclouxii. See *C. bungei*.
***C. ovata*.** Deciduous, spreading tree. H and S 30ft (10m). Bears 3-lobed, purplish leaves when young, maturing to pale green. Has large clusters of bell-shaped, white flowers, spotted with red and yellow, from mid- to late summer. Z4–8
C. speciosa illus. p.72.

CATANANCHE

Blue cupidone, Cupid's dart

ASTERACEAE/COMPOSITAE

Genus of annuals and perennials with daisylike flower heads that may be successfully dried for winter flower arrangements. Needs sun and light, well-drained soil. Propagate by seed in spring or by root cuttings in winter.
***C. caerulea* 'Major'** illus. p.270.

CATHARANTHUS

APOCYNACEAE

Genus of annuals and perennials, grown for their flowers. *C. roseus* is often grown annually from seed or cuttings and used as a summer bedding plant in cool climates. Requires full light and well-drained soil. Water containerized specimens moderately, less when temperatures are low. Prune long or straggly stems in early spring to promote a more bushy habit. Propagate by seed in spring or by semiripe or greenwood cuttings in summer.
C. roseus, syn. *Vinca rosea* (Rose periwinkle), illus. p.298. **Boa Series 'Boa Peach'** illus. p.300. **Cobra Series 'Cobra Burgundy'** illus. p.306.

CATTLEYA

ORCHIDACEAE

See also ORCHIDS.
***C. bicolor*.** Evergreen, epiphytic orchid for an intermediate greenhouse. H 4ft (1.2m), S 18in (45cm). Racemes of fragrant, yellow-green, or brown flowers, 4in (10cm) across, with crimson lips, are borne from summer to fall. Z11–12 (min. 41°F/5°C, max. 86°F/30°C)
***C. bowringiana*.** See *Guarianthe bowringiana*.
C. cinnabarina, syn. *Laelia cinnabarina*. Evergreen, epiphytic orchid for an intermediate greenhouse. H 16in (40cm), S 6in (15cm). Produces sprays of slender, orange flowers, 2in (5cm) or more across, usually in winter. Has narrowly ovate, rigid leaves, 3–4in (8–10cm) long. Needs good light in summer. Z11–12 (min. 41°F/5°C, max. 86°F/30°C)
***C.* J.A. Carbone gx**. Evergreen, epiphytic orchid for an intermediate greenhouse. H 8in (20cm), S 18in (45cm). Large heads of fragrant, pinkish-mauve flowers, 4in (10cm) across, each with a yellow-marked, deep pink lip, open in early summer. Has ovate, stiff leaves, 4–6in (10–15cm) long. Avoid spraying from overhead. Z10–12 (min. 41°F/5°C, max. 86°F/30°C)

x CATTLIANTHE

ORCHIDACEAE

See also ORCHIDS.
x *C.* Hazel Boyd gx 'Apricot Glow', syn. x *Sophrolaeliocattleya* Hazel Boyd 'Apricot Glow' (illus. p.467). Evergreen, epiphytic orchid for an intermediate greenhouse. H 4in (10cm). In spring and early summer, produces small heads of apricot-orange flowers, 3½in (9cm) across, with crimson marks on lips. Has ovate, rigid leaves, 4in (10cm) long. Grow in good light in summer. Z10–12 (min. 41°F/5°C, max. 86°F/30°C)
x *C.* Rojo gx 'Mont Millais', syn. x *Laeliocattleya* Rojo gx 'Mont Millais' (illus. p.467). Evergreen, epiphytic orchid for an intermediate greenhouse. H and S 12in (30cm). In winter to spring, bears arching heads of slender, reddish-orange

flowers, ¾in (2cm) across. Ovate leaves are up to 6in (15cm) long. Provide good light in summer. Z11–12 (min. 41°F/5°C, max. 86°F/30°C)

CAULOKAEMPFERIA

ZINGIBERACEAE

Genus of deciduous, rhizomatous, herbaceous perennials, grown for small but numerous, bright flowers, which are produced from late spring until fall, from the same stem as the leaves. Can be grown as a container plant in semishade and brought under glass with the onset of cold weather. Propagate by division or by seed in early spring.

C. petelotii. Herbaceous, rhizomatous perennial. H and S 8in (20cm). Has 6–8 narrowly lance-shaped, mid-green leaves. Clusters of broad-lipped, bright canary yellow flowers, surrounded by long, narrow, green bracts, are borne from spring into fall. Z11–12 (min. 50°F/10°C)

CAUTLEYA

ZINGIBERACEAE

Genus of summer-and fall-flowering, rhizomatous perennials. Grow in a sunny, wind-free position and in deep, rich, moist, but well-drained soil. Propagate by seed or by division in spring.

C. spicata illus. p.279.

CAYRATIA

VITACEAE

Genus of herbaceous perennials, deciduous and evergreen shrubs and climbers, grown for their leaves and fall color. Tendril tips have suckerlike pads that cling to supports. Insignificant greenish flowers are borne in summer. Grow in shade or semishade and well-drained soil. Propagate by softwood or greenwood cuttings in summer or by hardwood cuttings in early spring.
① The berries may cause mild stomach upset if ingested.

C. thomsonii, syn. *Parthenocissus thomsonii*, *Vitis thomsonii*, illus. p.209.

CEANOTHUS

California lilac

RHAMNACEAE

Genus of evergreen or deciduous shrubs, more rarely small trees, grown for their small but densely clustered, mainly blue flowers. Where marginally hardy, plant against a warm, sunny wall. Needs a sheltered site in full sun and light, well-drained soil. Cut dead wood from evergreens in spring and trim their side-shoots after flowering. Cut back shoots of deciduous species to basal framework in early spring. Propagate by semiripe cuttings in summer.

***C. arboreus* 'Trewithen Blue'** illus. p.194.

***C.* 'Autumnal Blue'** illus. p.138.

***C.* 'Blue Mound'.** Evergreen, bushy, dense shrub. H 5ft (1.5m), S 6ft (2m). Forms a mound of oblong, glossy, dark green leaves, covered, in late spring, with rounded clusters of deep blue flowers. Z7–9

***C.* 'Burkwoodii'** illus. p.205.

***C.* 'Cascade'.** Vigorous, evergreen, arching shrub. H and S 12ft (4m). Leaves are narrowly oblong, glossy and dark green. Large panicles of powder-blue flowers open in late spring and early summer. Z7–9

***C.* 'Concha'** illus p.138.

C. cuneatus* var. *rigidus, syn. *C. rigidus*. Evergreen, bushy shrub of dense, spreading habit. H 4ft (1.2m), S 8ft (2.5m). Bears oblong to rounded, glossy, dark green leaves and, from midspring to early summer, produces rounded clusters of deep purplish-blue flowers. Z7–9

***C.* 'Dark Star'.** Arching, evergreen shrub. H 6ft (2m), S 10ft (3m). Bears ovate, toothed, dark green leaves with deeply impressed veins. Honey-scented, dark purplish-blue flowers are borne in rounded clusters in late spring. Z7–9

***C.* 'Delight'.** Fast-growing, evergreen, bushy shrub. H 10ft (3m), S 15ft (5m). Bears oblong, glossy, deep green leaves. Long clusters of rich blue flowers are produced in late spring. Z7–9

***C.* x *delileanus* 'Gloire de Versailles'**, syn. *C.* 'Gloire de Versailles', illus. p.157.

C. dentatus. Evergreen, bushy, dense shrub. H 5ft (1.5m), S 6ft (2m). Has small, oblong, glossy, dark green leaves and is covered, in late spring, with rounded clusters of bright blue flowers. Z9–11

***C.* 'Gloire de Versailles'.** See *C.* x *delilianus* 'Gloire de Versailles'.

C. gloriosus. Evergreen, prostrate shrub. H 1ft (30cm), S 6ft (2m). Hollylike leaves are ovate and dark green. Rounded clusters of deep blue or purplish-blue flowers are borne from mid- to late spring. May suffer from chlorosis on chalky soils. Z7–9.

'Emily Brown', H 3ft (1m), S 12ft (4m), has small, very strongly toothed leaves and dark indigo flowers.

C. impressus illus. p.138. **'Puget Blue'** see *C.* 'Puget Blue'.

***C.* 'Italian Skies'.** Evergreen, bushy, spreading shrub. H 5ft (1.5m), S 10ft (3m). Has small, ovate, glossy, dark green leaves. Produces dense, conical clusters of bright blue flowers during late spring. Z7–9

***C.* x *pallidus* 'Marie Simon'.** Upright, bushy, deciduous shrub. H and S 5ft (1.5m). Has broadly ovate, mid-green leaves. Conical clusters of soft pink flowers are borne in profusion from midsummer to early fall. Z7–9. **'Perle Rose'** illus. p.153.

C. papillosus. Evergreen, arching shrub. H 10ft (3m), S 15ft (5m). Has narrowly oblong, glossy, dark green, sticky leaves. Bears dense racemes of blue or purplish-blue flowers during late spring. Z7–9

***C.* 'Puget Blue'**, syn. *C. impressus* 'Puget Blue', illus. p.205.

C. rigidus. See *C. cuneatus* var. *rigidus*.

***C.* 'Skylark'.** Evergreen, bushy shrub. H 6ft (2m), S 5ft (1.5m). Has oblong to elliptic, finely toothed, glossy, mid-green leaves. Dark blue flowers are borne in abundant, open clusters in late spring and early summer. Z7–9

***C.* 'Southmead'.** Evergreen, compact, bushy shrub. H and S 5ft (1.5m). Has small, oblong, glossy, dark green leaves. Deep blue flowers are borne in rounded clusters in late spring and early summer. Z7–9

C. thyrsiflorus. Vigorous, upright, evergreen shrub. H and S 20ft (6m). Has arching branches and broadly ovate, toothed, glossy, mid-green leaves.In late spring and early summer, bears rounded clusters of pale to dark blue flowers. Z7–9.

'Mystery Blue', H 8ft (2.5m), S 10ft (3m), is upright to spreading, with almond-scented, pale blue flowers in late spring.

var. *repens* (Creeping blueblossom) illus. p.159.

C.* x *veitchianus. Spreading, rigidly branched, evergreen shrub. H and S 10ft (3m). Dense, oblong clusters of deep blue flowers are borne in late spring and early summer amid small, wedge-shaped, toothed, glossy, dark green leaves, which are gray-green hairy beneath. Z7–9

Cedrela sinensis. See *Toona sinensis*.

Cedronella mexicana. See *Agastache mexicana*.

CEDRUS

Cedar

PINACEAE

See also CONIFERS.

C. atlantica, syn. *C. libani* subsp. *atlantica* (Atlas cedar). Conifer that is conical when young, broadening with age. H 50–80ft (15–25m), S 15–30ft (5–10m). Leaves are spirally arranged, needlelike, dull green or bright blue-gray. Has ovoid cones, the males pale brown, the females pale green, ripening to brown. Z6–9.

f. *fastigiata*, S 12–15ft (4–5m), has a narrower, more upright habit. **f. *glauca*** (syn. *C.a.* Glauca Group; Blue Atlas cedar) illus. p.95.

C. deodara (Deodar cedar) illus. p.96.

'Aurea' illus. p.104.

C. libani (Cedar of Lebanon) illus. p.97.

'Comte de Dijon' is a dwarf, conical conifer, which grows only 2in (5cm) a year. H 3–6ft (1–2m), S 2–4ft (60cm–1.2m). Branches carry flat layers of dark green to gray-green leaves and barrel-shaped, dull green to brown, female cones.

'Sargentii', H and S 3–5ft (1–1.5m), has horizontal, then weeping branches and may be trained into a rounded bush.

subsp. *atlantica* *see C. atlantica.* Z5–8

CEIBA

Silk cotton tree

MALVACEAE/BOMBACACEAE

Genus of deciduous, spiny-trunked trees, grown for their overall appearance and for shade. Requires full light or light shade and fertile, moisture-retentive, but well-drained soil. Water containerized specimens freely while in full growth, less at other times. Pruning is tolerated if necessary. Propagate by seed in spring or by semiripe cuttings in summer.

C. pentandra (Kapok, White silk cotton tree). Fast-growing tree with a spine-covered trunk. H and S 80ft (25m) or more. Hand-shaped leaves have 5–8 elliptic leaflets, red when young, becoming mid-green. Bears clusters of 5-petaled, white, yellow or pink flowers in summer, followed by woody, brownish seed pods containing silky kapok fiber. Z12 (min. 61°F/16°C)

C. speciosa. See *Chorisia speciosa*.

CELASTRUS

Bittersweet, Staff vine

CELASTRACEAE

Genus of deciduous, rarely evergreen shrubs and twining, woody climbers, grown for their attractive fruits. Most species bear male and female flowers on separate plants, so both sexes must be grown to obtain fruits; hermaphrodite forms of *C. orbiculatus* are available. Grow in any soil and in full or partial shade. Likes regular feeding. Prune in spring to cut out old wood and maintain shape. Propagate by seed in fall or spring or by semiripe cuttings in summer.

C. articulatus. See *C. orbiculatus*.

C. orbiculatus, syn. *C. articulatus* (Oriental bittersweet, Staff vine). Vigorous, deciduous, twining climber. H to 45ft (14m). Has small, rounded, toothed leaves. Clusters of 2–4 small, green flowers are produced in summer; tiny, long-lasting, beadlike, yellow fruits that turn black in fall, and finally split to show yellow insides and red seeds. Z4–8

C. scandens (American bittersweet, Staff tree, Staff vine). Deciduous, twining climber. H to 30ft (10m). Ovate leaves are 2–4in (5–10cm) long. Tiny, greenish flowers are borne in small clusters in leaf axils in summer. Bears long-lasting, round fruits in bunches, 2–3in (5–8cm) long; each fruit splits to show an orange interior and scarlet seeds. Z3–7

CELMISIA

New Zealand daisy

ASTERACEAE/COMPOSITAE

Genus of evergreen, late spring- and summer-flowering perennials and subshrubs, grown for their foliage and daisylike flower heads. Suitable for rock gardens or for growing among small shrubs, but may be difficult to grow in hot, dry climates. Needs a sheltered, sunny site and humus-rich, moist, but well-drained, sandy, acidic soil. Propagate by division in early summer or by seed when fresh.

C. argentea. Cushion-forming perennial. H 1in (25cm), S to 4in (10cm). Has densely packed, silver-woolly rosettes of linear leaves. In late spring and early summer, produces almost stemless, daisylike, white flower heads, with yellow centers. Z8–9

C. bellidioides. Evergreen, mat-forming perennial. H to 2in (5cm), S to 12in (30cm). Has rounded, leathery, dark green leaves. Bears almost stemless, small, daisylike, white flowers in early summer. Z8–9

C. coriacea of gardens. See *C. semicordata*.

C. ramulosa illus. p.360.

C. semicordata, syn. *C. coriacea* of gardens, illus. p.346.

C. walkeri, syn. *C. webbiana*, illus. p.336.

C. webbiana. See *C. walkeri*.

CELOSIA

Cockscomb

AMARANTHACEAE

Genus of erect annuals, perennials, and shrubs. Grows best in a sunny, sheltered position and in fertile, well-drained soil.

Propagate by seed sown under glass in spring.
C. argentea. Moderately fast-growing, erect, bushy perennial, usually grown as an annual. H 12–24in (30–60cm), S to 18in (45cm). Has ovate to lance-shaped, pale to mid-green leaves and, in summer, silvery-white, pyramid-shaped, feathery flower heads, to 4in (10cm) long. Cultivars are available in red, orange, yellow, and cream. Z10–11. **'Armor Mixed'**, H 12–16in (30–40cm), S 4–6in (10–15cm), has crested, curled heads of tightly packed, orange, purple, red, or yellow flowers. **Century Series** cultivars are among the most vigorous and widely cultivated, bearing vivid red, rose-pink, or yellow flower heads. **var. *cristata* 'Dragon's Breath'**, H 2ft (60cm), S 16in (40cm), has purple-tinged leaves and long-lasting, upright, flame-red flower heads. **var. *cristata* Kimono Series** cultivars, H to 8in (20cm), are dwarf, bearing large flower heads in bright colors, including salmon-pink, rose-red, yellow, or creamy-white.

CELTIS
Hackberry, Nettle tree
CANNABACEAE

Genus of deciduous and evergreen trees and shrubs, with inconspicuous flowers in spring, grown for their foliage and small fruits. Needs full sun (best in hot summers) and fertile, well-drained soil. Propagate by seed in fall.
C. australis illus. p.62.
***C. occidentalis*.** Deciduous, spreading tree. H and S 70ft (20m). Ovate, sharply toothed, glossy, bright green leaves turn yellow in fall, when they are accompanied by round, yellowish-red, then red-purple fruits. Z2–9
***C. sinensis*.** Deciduous, rounded tree. H and S 30ft (10m). Has ovate, glossy, dark green leaves, with fine teeth, and small, round, orange fruits. Z2–9

CENTAUREA
Knapweed
ASTERACEAE/COMPOSITAE

Genus of annuals, biennials, perennials and subshrubs, grown for their flower heads that each have a thistlelike center surrounded by a ring of slender ray petals. Requires sun; grows in any well-drained soil, even poor soil. Propagate by seed or by division in fall or spring.
C. cyanus (Cornflower). Fast-growing, upright, branching annual. H 1–3ft (30cm–1m), S 1ft (30cm). Has lance-shaped, gray-green leaves and, in summer and early fall, branching stems with usually double, daisylike, dark blue flower heads. Flowers are excellent for cutting. Tall (blue, illus. p.315) and dwarf cultivars are available, with flowers in shades of blue, pink, red, purple, or white. Z2–11.
Baby Series (dwarf), H to 1ft (30cm), has blue, white, or pink flower heads.
***C. dealbata*.** Erect perennial. H 3ft (1m), S 2ft (60cm). Lilac-purple flower heads are borne freely in summer, one or more to each stem. Has narrowly ovate, finely cut, light green leaves. Z2–11. **'Steenbergii'**, H 2ft (60cm), has carmine-lilac flowers.
***C. hypoleuca* 'John Coutts'** illus. p.265.
***C. macrocephala*.** Robust, clump-forming perennial. H 3ft (1m), S 2ft (60cm). In summer, sturdy stems bear large, yellow flower heads, within papery, silvery-brown bracts. Mid-green leaves are narrowly ovate and deeply cut. Z2–9
C. montana illus. p.269.
***C. moschata*.** See *Amberboa moschata*.
C. pulcherrima illus. p.232.

CENTRANTHUS
Valerian
CAPRIFOLIACEAE

Genus of late spring- to fall-flowering annuals and perennials, a few subshrubby. Requires sun. Thrives in an exposed position and in poor, alkaline soil. Propagate by seed in fall or spring.
C. ruber (Red valerian) illus. p.248.

CENTROPOGON
CAMPANULACEAE

Genus of herbaceous or subshrubby, upright, scrambling or climbing, deciduous or evergreen perennials, grown for their tubular, bright pink to red, orange or yellow flowers borne singly on stalks from between the uppermost leaves, which are sometimes patterned or variegated. Needs humus-rich, moist, but well-drained soil in sun or partial shade. Propagate by seed in spring.
C. ayavacensis, syn. *C. willdenowianus*. Deciduous, trailing perennial. H and S 3ft (1m). Flexuous, purple stems have rounded to broadly elliptic, mid-green leaves. Bears tubular, cerise flowers, with reflexed petals, from early spring to summer. Needs a sunny position. Protect roots from frost. Z11–12 (min. 50°F/10°C)
***C. cordifolius*.** Herbaceous, weakly climbing or trailing perennial. H 20in (50cm), S 3–6ft (1–2m). Red stems have heart-shaped, toothed, gray-green leaves, and bear flared, tubular, cerise flowers, from late spring to summer. Requires a sunny position. Protect roots from frost. Z11–12 (min. 50°F/10°C)
C. ferrugineus, syn. *Lobelia ferruginea*. Herbaceous, trailing perennial. H ½–6ft (0.5–2m), S 3–6ft (1–2m). Long, wiry, pendent stems bear narrowly ovate, silver-marked, mid-green leaves, with narrowly toothed margins. Flared, tubular, bright pink flowers, from summer into fall, are followed by round fruits. Best in a container. Z11–12 (min. 50°F/10°C)
***C. willdenowianus*.** See *C. ayavacensis*.

CEPHALARIA
CAPRIFOLIACEAE

Genus of annuals and perennials, best suited to large borders and wild gardens. Prefers sun and well-drained soil. Propagate by division in spring or by seed in fall.
C. gigantea, syn. *C. tatarica*, *Scabiosa gigantea*, *S. tatarica*, (Giant scabious, Yellow scabious). Robust, branching perennial. H 6ft (2m), S 4ft (1.2m). In early summer, wiry stems bear pincushionlike heads of primrose-yellow flowers above lance-shaped, deeply cut, dark green leaves. Z4–7
***C. tatarica*.** See *C. gigantea*.

CEPHALOCEREUS
CACTACEAE

Genus of slow-growing, columnar, perennial cacti with 20–30-ribbed, green stems. Prefers full sun and extremely well-drained, lime-rich soil. Prone to rot if overwatered. Propagate by seed in spring or summer.
C. senilis, syn. *Pilocereus senilis* (Old-man cactus), illus. p.479.

CEPHALOPHYLLUM
AIZOACEAE

Genus of creeping, clump-forming or spreading, perennial succulents with semicylindrical to cylindrical, green leaves. Flowers are borne after 1 or 2 years. Needs sun and well-drained soil. Propagate by seed in spring or summer.
***C. alstonii*.** Prostrate, perennial succulent. H 4in (10cm), S indefinite. Has cylindrical, gray-green leaves, to 3in (7cm) long. Bears daisylike, dark red flowers, 3in (8cm) across, in summer. Z10–12 (min. 45°F/7°C)
***C. pillansii*.** Clump-forming, perennial succulent. H 3in (8cm), S 2ft (60cm). Leaves are cylindrical, 2½in (6cm) long, dark green and covered in darker dots. Short flower stems produce daisylike, red-centered, yellow flowers, 2½in (6cm) across, from spring to fall. Z10–12 (min. 45°F/7°C)

CEPHALOTAXUS
Plum yew
TAXACEAE/CEPHALOTAXACEAE

See also CONIFERS.
C. harringtonii (Cowtail pine, Plum yew). Bushy, spreading conifer. H 15ft (5m), S 10ft (3m). Needlelike, flattened leaves are glossy, dark green, grayish beneath, radiating around erect shoots. Bears egg-shaped, fleshy, green fruits that ripen to brown. Z6–9. **'Fastigiata'**, H and S 15ft (5m), is shrubby, with erect branches and radially arranged leaves, to 3in (8cm) long.

CERASTIUM
CARYOPHYLLACEAE

Genus of annuals and perennials with star-shaped flowers. Some species are useful as groundcover. Needs sun and well-drained soil. Propagate by division in spring.
C. alpinum (Alpine mouse-ear). Prostrate perennial. H 3in (8cm), S 16in (40cm). Tiny, ovate, gray leaves cover stems. Flower stems carry solitary, small, star-shaped, white flowers throughout summer. Z2–9
C. tomentosum (Snow-in-summer) illus. p.350.

CERATOPHYLLUM
Hornwort
CERATOPHYLLACEAE

Genus of deciduous, perennial, submerged water plants, grown for their foliage. Suitable for ponds and cold-water aquariums. Prefers an open, sunny position, but tolerates shade better than most submerged plants. Propagation occurs naturally when scaly young shoots or winter buds separate from main plants. Take stem cuttings in growing season.
C. demersum (Hornwort). Deciduous, perennial, spreading, submerged water plant that occasionally floats. S indefinite. Has small, dark green leaves with 3 linear lobes. Best suited to a cool-water pond. Z5–11

CERATOPTERIS
PTERIDACEAE

Genus of deciduous or semievergreen, perennial or annual, submerged or floating water ferns, grown for their attractive foliage. Suitable for aquariums. Prefers a sunny position. Remove fading fronds regularly. Propagate in summer by division or by buds that develop on the leaves.
C. thalictroides (Water fern). Semievergreen, perennial, spreading, floating water fern that sometimes roots and becomes submerged. S indefinite. Lance-or heart-shaped, soft green fronds are wavy-edged. Z11–12 (min. 50°F/10°C)

CERATOSTIGMA
PLUMBAGINACEAE

Genus of deciduous, semievergreen or evergreen subshrubs and herbaceous perennials, grown for their blue flowers and fall color. Requires a sunny position, with well-drained soil. Cut out old, dead wood from shrubs in spring. Propagate shrubs by softwood cuttings in summer, perennials by division in spring.
***C. griffithii*.** Evergreen or semievergreen, bushy, dense shrub. H 3ft (1m), S 5ft (1.5m). Spoon-shaped, bristly, purple-edged, dull green leaves redden in fall. Clusters of tubular, bright blue flowers, with spreading petal lobes, are borne in late summer and fall. Z7–10
C. plumbaginoides illus. p.346.
C. willmottianum illus. p.159. **Forest Blue ('Lice')** is a compact, bushy, deciduous shrub. H 3ft (1m), S 5ft (1.5m). Lance-shaped to ovate, pointed, mid- to dark green, purple-margined leaves, turn rich red in fall. Bears abundant, tubular, cobalt-blue flowers, with spreading petal lobes, in late summer and fall. Z7–10

CERCIDIPHYLLUM
CERCIDIPHYLLACEAE

Genus of deciduous trees, grown for their foliage and often spectacular fall color. Late frosts may damage young foliage, but do not usually cause lasting harm. Requires sun or semishade and fertile, moist, but well-drained soil. Propagate by seed in fall.
C. japonicum (Katsura) illus. p.66.

CERCIS
Judas tree, Redbud
CAESALPINIACEAE

Genus of deciduous shrubs and trees with sometimes shrubby growth, cultivated for their foliage and small, pealike flowers, borne profusely in spring. Requires a position in full sun with deep, fertile, well-drained soil. Plant out as young specimens. Resents

transplanting. Propagate species by seed sown in fall, cultivars by budding in summer.
C. canadensis (Eastern redbud). Deciduous, spreading tree or shrub. H and S 30ft (10m). Heart-shaped, dark green leaves turn yellow in fall. Pealike flowers are magenta in bud, opening to pale pink in midspring before leaves emerge. Z4–8. **f. *alba* 'Forest Pansy'** illus. p.84. **'Ruby Falls'**, H 8ft (2.5m), S 5ft (1.5m), forms a dwarf, weeping tree, when trained on a stem; has heart-shaped, purple leaves, maroon-red underneath, that retain their color well into summer; bears dark rose-pink flowers in spring.
C. chinensis (Chinese redbud). Deciduous, densely branched shrub or small tree. H 20ft (6m), S 15ft (5m). Rounded, glossy, leathery, rich green leaves turn yellow in fall. Bears clusters of deep pink to lavender-pink flowers before the leaves. Z4–8. **'Avondale'**, H to 10ft (3m), is compact with abundant, dark purple-pink flowers. **'Don Egolf'**, H and S 10ft (3m), is slow-growing and compact, bearing a profusion of bright rose-mauve flowers in spring; it produces no fruit and has good disease resistance; take semihardwood cuttings in late summer.
C. siliquastrum illus. p.83. **'Bodnant'** is a spreading, sometimes multi-stemmed tree. H and S 30ft (10m). Inversely heart-shaped to kidney-shaped, glaucous, blue-green leaves, are bronze when young, yellow in fall. Bears clusters of dark purple-pink flowers, before and with the leaves, often on the main branches. Z4–8

CEREUS

CACTACEAE

Genus of treelike or columnar, perennial cacti with spiny stems, most having 4–10 pronounced ribs. Cup-shaped flowers usually open at night. Needs full sun and very well-drained soil. Propagate in spring by seed or, for branching species, by stem cuttings.
C. forbesii. See *C. hankeanus*.
C. hankeanus, syn. *C. forbesii*, *C. validus*, illus. p.488.
C. hildmannianus, syn. *C. peruvianus* of gardens (illus. p.488). **'Monstrosus'** is a columnar, perennial cactus. H 15ft (5m), S 12ft (4m). Swollen, occasionally fan-shaped, silvery-blue stems bear golden spines on 4–8 (or more) uneven ribs. Unlikely to flower in cultivation. Z10–12 (min. 45°F/7°C)
C. peruvianus of gardens. See *C. hildmannianus*.
C. silvestrii. See *Echinopsis chamaecereus*.
C. spachianus. See *Echinopsis spachiana*.
C. validus. See *C. hankeanus*.

CERINTHE

Honeywort

BORAGINACEAE

Genus of annuals, biennials, and occasionally perennials with somewhat fleshy stems and leaves. Requires a site in full sun, with dry to moist, but well-drained soil. Propagate by seed sown in fall or spring.
***C. major* 'Purpurascens'** illus. p.312.

CEROPEGIA

APOCYNACEAE/ASCLEPIADACEAE

Genus of evergreen or semievergreen perennials, most with slender, climbing or pendent stems, grown for their unusual flowers. Many are succulent. Needs partial shade and very well-drained soil. Propagate by seed or stem cuttings in spring or summer. *C. linearis* subsp. *woodii* is often used as grafting stock for difficult asclepiads.
C. distincta* subsp. *haygarthii. See *C. haygarthii*.
C. haygarthii, syn. *C. distincta* subsp. *haygarthii*. Semievergreen, climbing, succulent subshrub. H 6ft (2m) or more, S indefinite. Bears ovate or rounded, dark green leaves, ½–¾in (1–2cm) long. In summer, produces abundant, small, white or pinkish-white flowers, each with a pitcher-shaped tube, widening toward the top and then united at the tip by purplish-spotted petals that form a short stem ending in 5 "knobs" edged with fine hairs. The whole resembles an insect hovering over a flower. Z11–12 (min. 50°F/10°C)
C. linearis. See *C. linearis* subsp. *woodii*.
C. linearis* subsp. *woodii, syn. *C. linearis, C. woodii* (Heart vine, Rosary vine, String-of-hearts), illus. p.490.
C. sandersoniae. See *C. sandersonii*.
C. sandersonii, syn. *C. sandersoniae* (Fountain flower, Parachute plant). Semievergreen, scrambling, succulent subshrub. H 6ft (2m), S indefinite. Leaves are triangular to ovate, fleshy and ¾in (2cm) long. In summer–fall has tubular, green flowers, 2in (5cm) long, with paler green to white marks; the petals are flared widely at tips to form "parachutes." Z11–12 (min. 50°F/10°C)
C. woodii. See *C. linearis* subsp. *woodii*.

CESTRUM

SOLANACEAE

Genus of deciduous or evergreen shrubs, grown for their showy flowers. Foliage has an unpleasant scent. Where marginally hardy, grow against a warm, sunny wall or in a greenhouse. Requires a sheltered, sunny position and fertile, well-drained soil. Water containerized specimens freely when in full growth, moderately at other times. Support is needed for scrambling species. Propagate hardy species by softwood cuttings in summer, tender species by seed in spring or by semiripe cuttings in summer.
C. aurantiacum. Mainly evergreen semiscrambler that remains a rounded shrub if cut back annually. H and S to 6ft (2m). Bears ovate, bright green leaves. Tubular, bright orange flowers are borne in large, terminal trusses in summer and may be followed by round, white fruits. Prune annually, cutting out old stems near the base after flowering. Z9–11
C.* x *cultum illus. p.202.
***C.* 'Newellii'** illus. p.203.
C. parqui (Willow-leaved jessamine). Deciduous, open shrub. H and S 6ft (2m). Large clusters of tubular, yellowish-green flowers, fragrant at night, are borne in profusion in summer amid narrowly lance-shaped, mid-green leaves. Z9–11
Ceterach officinarum. See *Asplenium ceterach*.

CHAENOMELES

Flowering quince, Japonese quince, Japonica

ROSACEAE

Genus of deciduous, usually thorny, spring-flowering shrubs, grown for their showy flowers and fragrant fruits, produced in fall and used for preserves. Prefers sun and well-drained soil. On wall-trained shrubs, cut back side-shoots after flowering to 2 or 3 buds and shorten shoots growing away from wall during growing season. Propagate species by softwood or greenwood cuttings in summer or by seed in fall, cultivars by cuttings only in summer. Fireblight and, on chalk soils, chlorosis are common problems.
C. japonica, syn. *C. maulei* (Japanese quince, Japonica, Maule's quince). Deciduous, bushy, spreading shrub with thorns. H 3ft (1m), S 6ft (2m). Has ovate, mid-green leaves and, in spring, a profusion of 5-petaled, red or orange-red flowers, then round, yellow fruits. Z5–9
C. lagenaria. See *C. speciosa*.
C. maulei. See *C. japonica*.
C. speciosa, syn. *C. lagenaria, Cydonia speciosa*. Vigorous, deciduous, bushy shrub with thorns. H 8ft (2.5m), S 15ft (5m). Leaves are ovate, glossy, and dark green. Clustered, 5-petaled, red flowers are borne from early to midspring, and are followed by round, aromatic, greenish-yellow fruits. Z5–9. **'Apple Blossom'** see *C.s.* 'Moerloosei'. **'Geisha Girl'** has double, deep apricot-pink flowers. **'Moerloosei'** (syn. *C.s.* 'Apple Blossom') illus. p.122. Flowers of **'Nivalis'** are pure white. **'Simonii'**, H 3ft (1m), S 6ft (2m), bears abundant, semidouble, deep red flowers. **'Snow'** illus. p.146.
***C.* x *superba* 'Crimson and Gold'** illus. p.193. **'Etna'** is a deciduous, bushy, dense shrub with thorns. H and S 10ft (3m). Has ovate, glossy, dark green leaves. Produces abundant, 5-petaled, scarlet flowers, with conspicuous, golden-yellow anthers, in spring, followed by round, yellow fruits. **'Knap Hill Scarlet'**, H 5ft (1.5m), S 10ft (3m), has large, brilliant red flowers. **'Nicoline'** illus. p.147.
'Pink Lady' bears very early, dark pink flowers. **'Rowallane'** illus. p.147. Z5–9

CHAENOSTOMA

SYN. SUTERA

SCROPHULARIACEAE

Genus of annuals, soft-stemmed, evergreen perennials, and small, evergreen shrubs or subshrubs, grown for their showy but small flowers. Needs full sun and moist soil. Useful for hanging baskets and containers or as summer bedding. Propagate cultivars by cuttings, or by seed in spring.
***C. cordatum* 'Snowflake'**, syn. *Sutera cordata* 'Snowflake', illus. p.298.

Chamaecereus silvestrii. See *Echinopsis chamaecereus*.

CHAMAECYPARIS

False cypress

CUPRESSACEAE

① Contact with the foliage may aggravate skin allergies. See also CONIFERS.
C. lawsoniana, syn. *Cupressus lawsoniana* (Lawson cypress). Upright, columnar conifer with branches drooping at tips. H 50–130ft (15–40m), S 6–15ft (2–5m). Bears flattened sprays of scalelike, aromatic, dark green leaves and round cones, the males brick-red, the females insignificant and green. Z5–8.
'Columnaris' illus. p.103. **'Ellwoodii'**, H 10ft (3m), S 5ft (1.5m), is erect with incurved, blue-gray leaves. **'Fletcheri'**, H to 40ft (12m), has gray, incurved leaves. **'Gnome'**, H 3ft (1m), is a dwarf, bun-shaped form with blue foliage. **'Green Pillar'** (syn. *C.l.* 'Green Spire') illus. p.102. **'Intertexta'** illus. p.96. **'Kilmacurragh'**, H 30–50ft (10–15m), S 3ft (1m), has very bright green foliage. **'Lanei Aurea'** illus. p.102. **'Minima Aurea'**, H 3ft (1m), S 20in (50cm), is a dwarf shrub with compact sprays of golden-yellow foliage. **'Pembury Blue'** illus. p.99. **'Wisselii'**, H 70–80ft (20–25m), S 6–10ft (2–3m), is fast-growing, with erect branches and blue-green leaves.
C. nootkatensis. See *Xanthocyparis nootkatensis*. **'Pendula'** see *Xanthocyparis nootkatensis* 'Pendula'.
C. obtusa (Hinoki cypress). Conical conifer. H 50–70ft (15–20m), S 15ft (5m). Has stringy, red-brown bark and scalelike, aromatic, dark green leaves with bright silver lines at the sides and incurving tips. Small, rounded cones ripen to yellow-brown. Z4–8. **'Coralliformis'**, H to 20in (50cm), S 3ft (1m), is dwarf, with threadlike shoots. **'Crippsii'** illus. p.104.
'Fernspray Gold', H 6–11½ft (2–3.5m), S 5–8ft (1.5–2.5m), is slow-growing, the branches clothed with short, rich golden-yellow, fernlike leaves. **'Intermedia'**, H to 12in (30cm), S 16in (40cm), is a round, open, dwarf shrub with downward-spreading, light green foliage.
'Kamarachiba', H 10in (25cm), S 30in (75cm), is a dwarf, spreading shrub, with pale, creamy sprays of foliage.
'Kosteri', H 3–6ft (1–2m), S 6–10ft (2–3m), forms a sprawling bush with twisted, lustrous foliage; is very slow-growing.
'Nana', eventual H 3ft (1m), S 5–6ft (1.5–2m), forms a flat-topped bush. **'Nana Aurea'**, H and S 6ft (2m), has golden-yellow leaves. **'Nana Gracilis'** (illus. p.105), H 6ft (2m), S 5–6ft (1.5–2m), has glossy, rich green foliage. **'Nana Pyramidalis'**, H and S to 2ft (60cm), is a slow-growing, dense, conical, dwarf cultivar with horizontal, cup-shaped leaves. **'Tetragona Aurea'**, H 30ft (10m), S 6–10ft (2–3m), produces golden- or bronze-yellow leaves, greener if grown in shade.
C. pisifera, syn. *Cupressus pisifera* (Sawara cypress). Conical conifer with horizontal branches. H 50ft (15m), S 15ft (5m). Has ridged, peeling, red-brown bark, scalelike, aromatic, fresh green leaves, white at sides and beneath, and angular, yellow-brown cones. Z4–8.
'Boulevard', H 30ft (10m), has silver-blue foliage. **'Filifera'** has whiplike, hanging shoots and dark green foliage.

'Filifera Aurea' (illus. p.105), H 40ft (12m), S 10–15ft (3–5m), also has whiplike shoots, but with golden-yellow leaves. **'Filifera Nana'**, H 2ft (60cm), S 3ft (1m), is a dwarf form with whiplike branches. **'Nana'**, H and S 20in (50cm), is also dwarf, with dark bluish-green foliage. **'Plumosa'** is broadly conical to columnar, with yellowish, gray-green leaves. **'Plumosa Rogersii'**, H 6ft (2m), S 3ft (1m), has yellow foliage. Slow-growing **'Squarrosa'**, H to 70ft (20m), has a broad crown and soft, blue-gray foliage.
C. thyoides, syn. *Cupressus thyoides* (White cypress), illus. p.101. **'Andelyensis'** is a slow-growing, conical, dwarf conifer. H 10ft (3m), S 3ft (1m). Has wedge-shaped tufts of scalelike, aromatic, blue-green leaves. Female cones are glaucous blue-gray, later purple-black to red-brown. Z4–9

CHAMAECYTISUS

FABIACEAE

Genus of evergreen or deciduous, small trees, shrubs, and subshrubs, occasionally spiny, grown for their pealike flowers. Best in full sun and moderately fertile, well-drained soil. Propagate by seed in fall or spring, or by semiripe cuttings in summer.
C. albus. See *Cytisus albus*.
C. hirsutus, syn. *Cytisus hirsutus*. Deciduous, bushy, rounded shrub. H and S 3ft (1m). Dense, terminal heads of large, yellow flowers are borne from midsummer to fall, amid gray-green leaves with 3-palmate, oblong to elliptic leaflets. Z5–7
C. purpureus, syn. *Cytisus purpureus* (Purple broom). Deciduous, arching shrub. H 18in (45cm), S 2ft (60cm). Semierect stems are clothed with leaves of 3-palmate, obovate leaflets. Clusters of 2 or 3 pale lilac to purple flowers open in early summer on previous year's wood. Suits a bank or sunny border. Z5–7. **f. *albus*** illus. p.337.

CHAMAEDAPHNE

SYN. CASSANDRA

ERICACEAE

Genus of one species of evergreen shrub, grown for its white flowers. Needs sun or semishade and moist, peaty, acidic soil. Propagate by semiripe cuttings in summer.
C. calyculata (Leatherleaf). Evergreen, arching, open shrub. H 2½ft (75cm), S 3ft (1m). Leaves are small, oblong, leathery and dark green. Leafy racemes of small, urn-shaped, white flowers are borne on slender branches in mid- to late spring. Z6–9

CHAMAEDOREA

ARECACEAE/PALMAE

Genus of evergreen palms, grown for their overall appearance. Needs shade or semishade and humus-rich, well-drained soil. Water containerized plants moderately, less when temperatures are low. Propagate by seed in spring at not less than 25°C (77°F). Red spider mite may be troublesome.
C. elegans, syn. *Neanthe bella* (Dwarf mountain palm, Parlour palm), illus. p.458.

CHAMAEMELUM

Chamomile

ASTERACEAE/COMPOSITAE

Genus of aromatic annuals and perennials, suitable as groundcover or for a lawn. Flowers may be used to make tea. Needs sun and well-drained soil. Propagate by division in spring or by seed in fall.
C. nobile, syn. *Anthemis nobilis* (Lawn chamomile, Roman chamomile). Evergreen, mat-forming, invasive perennial. H 4in (10cm), S 18in (45cm). Has finely divided, aromatic leaves and daisylike heads of white flowers, with yellow centers, borne in late spring or summer. ⓘ Contact with foliage may aggravate skin allergies. Z4–9.
'Treneague' is a non-flowering, less invasive cultivar that, requiring less mowing, is better for a lawn.

CHAMAENERION

SYN. CHAMERION

ONAGRACEAE

Genus of woody-based, herbaceous perennials, grown for their pink or white flowers that are borne for long periods from summer to fall. Some species are invasive, but *C. angustifolium* is good for a rock garden or border. Tolerates sun or shade and prefers moist, but well-drained soil. Propagate by seed in spring, or by softwood cuttings from sideshoots in spring.
C. angustifolium* f. *album, syn. *Epilobium angustifolium* f. *album* (White rosebay), illus. p.216.

Chamaepericlymenum canadense. See *Cornus canadensis*.

CHAMAEROPS

Dwarf fan palm

ARECACEAE/PALMAE

Genus of one species of shrubby palm, cultivated for its overall appearance. Needs full light and fertile, well-drained soil. Water containerized plants moderately, less when not in full growth. Propagate by seed in spring at not less than 22°C (72°F) or by suckers in late spring. Red spider mite may be a nuisance.
C. humilis illus. p.165.

Chamaespartium sagittale. See *Genista sagittalis*.
Chamaespartium sagittale* subsp. *delphinense. See *Genista delphinensis*.

CHAMELAUCIUM

MYRTACEAE

Genus of evergreen shrubs, grown for their flowers and overall appearance. Needs full sun and well-drained, sandy, neutral to acidic soil. Water potted specimens moderately, sparingly when not in full growth. To maintain a compact habit, cut back flowered stems by half when the last bloom falls. Propagate by seed in spring or by semiripe cuttings in summer.
C. uncinatum (Geraldton waxflower) [white] illus. p.453. **'Bundara Excelsior'** illus. p.454.

Chamerion. See *Chamaenerion*.

CHASMANTHE

IRIDACEAE

Genus of cormous perennials, grown for their showy flowers. Needs full sun or partial shade and well-drained soil. Water well in late winter and early spring; reduce watering in summer and fall. Propagate by division in fall.

C. bicolor. Spring-flowering corm. H 36in (90cm), S 20in (50cm). Has lance-shaped or linear leaves and spikelike, one-sided racemes of orange-red flowers, with green markings, maroon throats, and yellow-striped tubes. Z9–11
C. floribunda. Summer-flowering corm. H 20–60in (50cm–1.5m), S 6in (15cm). Bears lance-shaped leaves and numerous bright orange or yellow flowers, arranged in 2 ranks, on branched spikes. Z10–11.
var. *duckittii* has yellow flowers.

CHASMANTHIUM

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES and SEDGES.
C. latifolium illus. p.288.

CHEILANTHES

Lip fern

PTERIDACEAE

Genus of mainly evergreen ferns. Needs full light and humus-rich, well-drained soil. Do not overwater containerized plants or splash water on fronds. Remove fading foliage regularly. Propagate by spores in summer.
C. lanosa of gardens. See *C. tomentosa*.
C. tomentosa, syn. *C. lanosa* of gardens. Evergreen fern. H and S 6–9in (15–23cm). Leaves are triangular or lance-shaped and have much divided, soft green fronds on hairy, black stems. Z5–8

Cheiranthus. See *Erysimum*.

CHEIRIDOPSIS

AIZOACEAE

Genus of clump-forming, perennial succulents with pairs of semicylindrical leaves. Needs sun and well-drained soil. Water in fall to encourage flowers. Propagate by seed or stem cuttings in spring or summer.
C. candidissima. See *C. denticulata*.
C. denticulata, syn. *C. candidissima*. Clump-forming, perennial succulent. H 4in (10cm), S 8in (20cm). Has semicylindrical, slender, fleshy, blue-gray leaves, each 4in (10cm) long with a flat top, joined in pairs for almost half their length. Bears daisylike, shiny, white to pale yellow flowers, to 2½in (6cm) across, in spring. Z10–11 (min. 41°F/5°C)
C. purpurata. See *C. purpurea*.
C. purpurea, syn. *C. purpurata*. Carpeting, perennial succulent. H 4in (10cm), S 12in (30cm). Has semicylindrical, thick, short, glaucous green leaves, each with a flat top. In early spring, produces daisylike, purple-pink or yellow flowers, 1½in (4cm) across. Z10–11 (min. 41°F/5°C)

CHELIDONIUM

Celandine, Greater Celandine

PAPAVERACEAE

Genus of one species of variable biennial or short-lived perennial that rapidly forms groundcover. Grows in sun or shade and in any but very wet soil. Can be invasive; suitable for naturalizing in a wildflower garden or in light woodland. Propagate by seed or division in fall. ⓘ Contact with the sap may cause skin blisters.
***C. majus* 'Flore Pleno'** illus. p.227.

CHELONE

Turtle-head

PLANTAGINACEAE

Genus of summer- and fall-flowering perennials. Needs semishade and moist soil. Ideal for a late summer border. Propagate by soft-tip cuttings in summer or by division or seed in fall or spring.
C. barbata. See *Penstemon barbatus*.
C. obliqua (Turtle-head) illus. p.438.

Chiastophyllum oppositifolium. See *Umbilicus oppositifolius*.

CHIMONANTHUS

Wintersweet

CALYCANTHACEAE

Genus of deciduous or evergreen, winter-flowering shrubs, grown for their very fragrant flowers, borne in winter before the young leaves emerge. Reduce susceptibility of flowers to frost damage by training plants against a warm, sunny wall. Needs full sun and fertile, well-drained soil. Propagate species by seed when ripe, in late spring and early summer, cultivars by softwood cuttings in summer.
C. fragrans. See *C. praecox*. **'Luteus'** see *C. praecox* 'Luteus'.
C. praecox, syn. *C. fragrans* (Wintersweet), illus. p.144. **'Concolor'** see *C.p.* 'Luteus'. **'Luteus'** (syn. *C. fragrans* 'Luteus', *C. praecox* 'Concolor') is a vigorous, broadly upright, deciduous shrub. H 12ft (4m), S 10ft (3m). Has long, lance-shaped, glossy, mid-green leaves, rough above, smooth beneath. Pendent, fragrant, wide-opening, pure yellow flowers are borne on bare stems in winter. Z7–9

CHIMONOBAMBUSA

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
C. tumidissinoda, syn. *Qiongzhuea tumidissinoda*, illus. p.287.

CHIONANTHUS

Fringe tree

OLEACEAE

Genus of evergreen and deciduous trees and shrubs, grown for their profuse, white flowers. Flowers more freely in areas with hot summers. Good specimen plants and also suitable for a shrub border. Prefers full sun and fertile,

well-drained, but not too dry soil. Propagate by seed in fall.
C. retusus (Chinese fringe tree). Deciduous, often treelike, arching shrub. H and S 10ft (3m). From early to midsummer, star-shaped, pure white flowers are borne in large clusters amid ovate, bright green leaves. Z3–9
C. virginicus (Fringe tree) illus. p.112.

CHIONOCHLOA

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
C. conspicua (Plumed tussock grass). Evergreen, tussock-forming, perennial grass. H 4–5ft (1.2–1.5m), S 3ft (1m). Very long, mid-green leaves are tinged reddish-brown. Has sturdy, arching stems with long, loose, open panicles of cream spikelets in summer. Z8–10
C. rubra illus. p.285.

Chionodoxa. See *Scilla*.
x ***Chionoscilla.*** See *Scilla*.
Chirita sinensis. See *Primulina dryas*.

CHLIDANTHUS

AMARYLLIDACEAE

Genus of summer-flowering bulbs, grown for their showy, strongly scented flowers. Needs a sunny site and well-drained soil. Plant in the open after flowering; if necessary, lift and dry off for winter. Propagate by offsets in spring.
C. fragrans illus. p.424.

CHLOROGALUM

Soap plant

ASPARAGACEAE

Genus of late spring- and summer-flowering bulbs, grown more for botanical interest than for floral display, although they produce elegant sprays of flowers. Requires sun and well-drained soil. Propagate by seed in fall or spring.
C. pomeridianum. Summer-flowering bulb. H to 8ft (2.5m), S 6–8in (15–20cm). Semierect, basal leaves are long, narrow and gray-green, with wavy margins. Produces a large, loosely branched head of small, saucer-shaped, white flowers, with a central, green or purple stripe on each petal, that open after midday. Z9–11

CHLOROPHYTUM

ASPARAGACEAE

Genus of evergreen, stemless perennials with short rhizomes. Ideal for growing in containers and hanging baskets; they are popular foliage houseplants. Grow in a light position, away from direct sun, in fertile, well-drained soil. Water freely in growing season, but sparingly at other times if pot-grown. Propagate by seed, division or plantlets (produced on flower stems of some species) at any time except winter.
C. capense. Evergreen, tufted perennial. H 12in (30cm), S indefinite. Forms rosettes of lance- or strap-shaped, bright green leaves, to 2ft (60cm) long. Tiny, white flowers in racemes, to 2ft (60cm) long, are borne in summer. Does not produce plantlets. Z10–11 (min. 45°F/7°C)
C. capense of gardens. See *C. comosum*.
C. comosum, syn. *C. capense* of gardens (Ribbon plant, Spider plant). Evergreen, tufted perennial. H 12in (30cm), S indefinite. Very narrow leaves, to 18in (45cm) long, spread from a rosette. Racemes of many small, star-shaped, white flowers are borne on thin stems, 2ft (60cm) or more long, at any time. Small rosettes of leaves may be produced on flower stems, forming plantlets. Z10–12. (min. 41°F/5°C).
'Vittatum' illus. p.465.

CHOISYA

Mexican orange blossom

RUTACEAE

Genus of evergreen shrubs, grown for their attractive, aromatic foliage and for their fragrant, star-shaped flowers. Best grown in a shrub border or against a wall. Requires full sun and fertile, well-drained soil. Propagate by semiripe cuttings in late summer.
***C.* 'Aztec Pearl'.** See *C.* x *dewitteana* 'Aztec Pearl'.
***C.* x *dewitteana* 'Aztec Pearl'** illus. p.122. **White Dazzler ('Londaz')** is an elegant, compact, rounded shrub. H and S to 3ft (1m). Has aromatic, dark green leaves divided into 3–5 narrow leaflets. In late spring, bears a profusion of fragrant, snow-white flowers, in clusters of 3–5 in the leaf axils, and flowers again in late summer. Z7–10
C. ternata (Mexican orange blossom) illus. p.122. **Sundance ('Lich')** illus. p.148.

Chordospartium. See *Carmichaelia*.

CHORISIA

MALVACEAE

Genus of deciduous or semievergreen, succulent trees, usually with spine-covered trunks, grown mainly for their flowers in fall and winter and their overall appearance. Needs full light and well-drained soil. Water containerized specimens freely when in full growth, very little when leafless. Pruning is tolerated if necessary. Propagate by seed in spring. Red spider mite may be troublesome.
C. speciosa, syn. *Ceiba speciosa* (Floss silk tree), illus. p.450.

CHORIZEMA

PAPILIONACEAE/LEGUMINOSAE

Genus of small, evergreen shrubs and twining or scandent climbers, grown mainly for their flowers. Requires full light and humus-rich, well-drained, sandy soil, preferably neutral to acidic. Water potted plants moderately, less hen not in full growth. Tie climbers to supports, or grow in hanging baskets. Propagate by seed in spring or by semiripe cuttings in summer.
C. ilicifolium (Holly flame pea) illus. p.454.

Chrysalidocarpus lutescens. See *Dypsis lutescens*.

CHRYSANTHEMUM

syn. AJANIA, DENDRANTHEMA

ASTERACEAE/COMPOSITAE

Genus of upright, sometimes woody-based herbaceous perennials. Chrysanthemums are grown primarily for their showy flower heads, 1–12in (2.5–30cm) across, which consist of ray-florets in a variety of colors, including yellow, white, pink, purple and red, with yellow disc-florets; they are cultivated in a multiplicity of forms. The dark green leaves are shallowly to deeply lobed or cut, ovate to lance-shaped, and often feathery. Lift marginally hardy or frost-tender florists' chrysanthemums and store in a frost-free place over winter. Provide a sunny site and reasonably fertile, well-drained soil. Plants grown for exhibition require regular feeding. Pinch out growing tips to encourage flowering sideshoots; stake tall plants with canes. Propagate annuals by seed sown *in situ* in spring; thin out, but do not transplant. Propagate hardy perennials by division in fall, after flowering, or in early spring; florists' chrysanthemums by basal softwood cuttings in spring. Aphids, capsids, froghoppers, earwigs, mildew, and white rust may be troublesome.

Florists' chrysanthemums
These perennial cultivars are available in a wide range of forms and colors, and are grown for exhibition, the garden and cutting. They are often categorized according to their flower head form (see feature panel pp.252–253), their flowering season—early (late summer and early fall), mid-season (midfall), or late (midfall to midwinter)—and whether they are disbudded or non-disbudded (see below). The best groups for outdoor use are the early-flowering spray chrysanthemums, reflexed cultivars, and pompom chrysanthemums. Some midseason reflexed cultivars are suitable for garden use, but most need protection from rain. Late-flowering cultivars are brought into flower in a temperate or warm greenhouse.

Disbudded—these chrysanthemums have all the flower buds on each shoot removed except for the terminal bud, to increase the size of the remaining bloom. They are classified by exhibitors into size groups. For exhibition, those with incurved, intermediate or reflexed flowers are restricted to 2 blooms per plant; in gardens, 4 or 5 blooms are allowed to develop. Single and anemone-centered flowers are reduced to 4 to 8 blooms for exhibition, and 10 or more for garden use and for cutting.

Non-disbudded—the buds of these chrysanthemums are usually allowed to develop freely. Non-disbudded chrysanthemums are grouped according to size and habit.

Spray chrysanthemums produce several blooms per stem in a variety of flower forms: single, intermediate, reflexed, anemone-centered, pompom, spoon-shaped, or quill-shaped. They are grown mainly for garden decoration and for cutting. For exhibition, each plant is allowed to develop 4 or 5 stems, each bearing 5 or more flower heads. Late-flowering sprays are restricted to 3 stems; for exhibition, each stem should bear 6 or 7 blooms or, if grown with controlled day length, 12 blooms per stem; for exhibition, the central bud of the spray is usually removed to give a more rounded outline.
Charm chrysanthemums have a dwarf, bushy, domed to almost spherical habit, and bear hundreds of single flower heads, to 1in (25cm) across. They do not need stopping or training, and are grown for indoor decoration, for exhibition, and as bonsai plants.
Cascade chrysanthemums have similar flower heads to charms, but are trained as fans, pillars, pyramids or cascades. They are grown for indoor decoration, for exhibition, and as bonsai plants.
Pompom chrysanthemums are dwarf and bushy, producing 50 or more dense, spherical, or occasionally hemispherical flower heads per plant. They suit an outdoor border.
Semipompom chrysanthemums, sometimes called Japanese pompoms, have similar flowers to those of the pompom, but their yellow centers are revealed as they mature.

Rubellum Group chrysanthemums
These are clump-forming, woody-based, bushy perennials. All are named selections or hybrids of *C. zawadzkii*. They have cut leaves, often with a silvery cast, and bear single, semidouble, or double, yellow-centered flower heads in a range of colors. Blooming in late summer and early fall, they are good for a herbaceous border and for cutting.

Korean Group chrysanthemums
These are similar to the Rubellum Group chrysanthemums, but the cultivars are dwarfer and hardier.

Pot chrysanthemums
These chrysanthemums, usually unnamed at point of sale, are grown commercially on a large scale. They are mostly late-flowering cultivars brought into bloom by manipulation of temperature and day length, and treated with dwarfing hormone, to form compact, short-jointed plants. They are sold as conservatory or houseplants and are best grown as short-term potted plants.

***C.* 'Alison Kirk'.** Early, incurved, florists' chrysanthemum. H 4ft (1.2m), S 1–2ft (30–60cm). Produces white flowers, to 5–6in (12–15cm) across, in early fall. More suitable for exhibition than garden use. Z10–11
***C.* 'Allouise Pink'.** Early, intermediate, florists' chrysanthemum. H 4ft (1.2m), S 20–36in (50–100cm). Produces pale yellowish-pink flowers, up to 9in (23cm) across, in early fall. Good for garden use, floristry, and exhibition. Z8–10
C. alpinum. See *Leucanthemopsis alpina*.
***C.* 'Anastasia'** (illus. p.253). Early, florists' outdoor semipompom chrysanthemum. H 2ft (60cm), S 20in (50cm). Has flat-topped, dark purplish-pink flowers, 1¼in (3cm) across, with yellow centers, in midfall. Z6–9
***C.* 'Angelic'.** Pompom, Korean Group chrysanthemum. H 18in (45cm), S 12in (30cm). In early to midfall, produces flower heads, 1in (25cm) across, that

open white, with yellow centers becoming white. Z7–10

***C.* 'Apollo'** (illus. p.253). Semidouble, Korean Group chrysanthemum. H 36in (90cm), S 30in (75cm). Bronze-red flowers, 2in (5cm) across, with petals of uneven length, open from dark red buds in late fall. Z6–9

***C.* 'Aunt Millicent'** (illus. p.252). Single, Korean Group chrysanthemum. H 30in (75cm), S 2ft (60cm). Produces abundant, silvery-pink flowers, 1½in (4cm) across, each with a pale zone around the yellow center, in midfall. Has rather large leaves. Z7–10

***C.* 'Autumn Days'.** Early, intermediate, florists' chrysanthemum. H 3½–4ft (1.1–1.2m), S to 2½ft (75cm). In early fall, bears loosely incurved, bronze flowers, 5in (12cm) across when disbudded. Z10–11

***C.* 'Beacon'.** Intermediate, florists' chrysanthemum. H 4ft (1.2m), S 2ft (60cm). Bears red, sometimes bronze, flowers, to 7in (18cm) across, in late fall. Good for exhibition. Z10–11 (min. 41°F/5°C)

***C.* 'Beppie Bronze'.** Intermediate, florists' spray chrysanthemum. H 4ft (1.2m), S 16in (45cm). Sprays of bright orange blooms, 2½in (6cm) across, with red-orange centers, are produced in late summer to fall. Z8–11

***C.* 'Bill Wade'.** Intermediate to loosely incurved, florists' chrysanthemum. H 4½ft (1.3m), S 2ft (60cm). Loosely incurving, white flowers, 7–8in (18–20cm) across when disbudded, are borne in early fall. Most suitable for exhibition. Z9–11

***C.* 'Breitner'.** Fully reflexed, florists' chrysanthemum. H 3½–4ft (1.1–1.2m), S 2½ft (75cm). Pink flowers, to 5in (12cm) across, are borne in early fall. Z9–11

***C.* 'Bronze Elegance'** (illus. p.253). Florists' semipompom chrysanthemum. H 2ft (60cm), S 20in (50cm). Light bronze flowers, 1in (25cm) across, with yellow centers, are borne on small-leaved plants in midfall. Z7–10

***C.* 'Bronze Fairie'.** Pompom, Korean Group chrysanthemum. H 1–2ft (30–60cm), S 2ft (60cm). Has bronze flowers, 1½in (4cm) across, in early fall. Z9–11

***C.* 'Bronze Hedgerow'.** Single, florists' chrysanthemum. H 5ft (1.5m), S 2½–3ft (75cm–1m). Produces bronze flowers, 5in (12cm) across when disbudded, in late fall. Z10–12 (min. 41–50°F/5–10°C)

***C.* 'Bronze Yvonne Arnaud'.** Reflexed, florists' chrysanthemum. H 4ft (1.2m), S 2–2½ft (60–75cm). A sport of *C.* 'Yvonne Arnaud' with fully reflexed, bronze flowers in early fall. Z10–11

***C.* 'Buff Margaret'.** Reflexed, florists' spray chrysanthemum. H 4ft (1.2m), S to 2½ft (75cm). Has pale bronze flowers, to 3½in (9cm) across, in early fall. Good for exhibition. Z6–9

C. carinatum. See *Ismelia carinata*.

***C.* 'Carmine Blush'** (illus. p.253). Single, Rubellum Group chrysanthemum. H 2ft (60cm), S 18in (45cm). Bears clear rose-pink flowers, 1½in (4cm) across, each with a greenish-yellow center, from midfall to early winter. Z7–10

***C.* 'Chelsea Physic Garden'** (illus. p.253). Double, Rubellum Group chrysanthemum. H 3½ft (1.1m), S 3ft (90cm). In late fall, bears bronze flowers, 2½in (6cm) across, with yellow-petaled undersides. Z7–10

***C.* Chesapeake ('Yochesapeake')** (illus. p.252). Spider-form, quill-shaped, florists' spray chrysanthemum. H 4ft (1.2m), S 20in (50cm). Bears white flowers, to 8in (20cm) across when disbudded, in fall. Z8–11

***C.* 'Chessington'.** Intermediate, florists' chrysanthemum. H 6–7ft (2–2.2m), S 2½ft (75cm). Produces fairly tightly incurved, white flowers, 7–8in (18–20cm) across, in early fall. More suitable for exhibition than for garden use. Z8–11

***C.* 'Claire Louise'.** Fully reflexed, florists' chrysanthemum. H 4–4½ft (1.2–1.3m), S 2½ft (75cm). Has bronze flowers, to 6in (15cm) across, in early fall. Ideal for exhibition. Z8–11

***C.* 'Clara Curtis'** illus. p.247.

C. coccineum. See *Tanacetum coccineum*.

C. coronarium. See *Glebionis coronaria*.

***C.* 'Cottage Apricot'** (illus. p.253). Single, Korean Group chrysanthemum. H 30in (75cm), S 2ft (60cm). Bears bright orange flowers, 2½in (6cm) across, each with a narrow yellow ring around the yellow center, in midfall. Z7–10

***C.* 'Cousin Joan'.** Single, Korean Group chrysanthemum. H 3½ft (1.1m), S 20in (50cm). Has sweetly scented blooms, 2in (5cm) across, in dark pinkish-red, each with a whiteish ring at the base, that open in mid- to late fall. Z7–10

***C.* 'Cream West Bromwich'.** Fully reflexed, florists' chrysanthemum. H 5ft (1.5m), S 2½ft (75cm). Bears very pale creamy-yellow flowers, each with a brighter yellow tone at the center, to 7in (18cm) across, in midfall. Good for exhibition. Z8–11

***C.* 'Daniel Cooper'.** Single, Korean Group chrysanthemum. H 30in (75cm), S 20in (50cm). Produces bright pink flowers, 1½in (4cm) across, in early to midfall. Z7–10

C. densum. See *Tanacetum densum* subsp. *amani*.

***C.* 'Doctor Tom Parr'** (illus. p.253). Florists' semipompom chrysanthemum. H and S 18in (45cm). Rather flat, rose-madder flowers, 1¼in (3cm) across, with gold flashes fading to beige, are produced in midfall. A darker sport of *C.* 'Anastasia'. Z6–9

***C.* 'Duchess of Edinburgh'** (illus. p.253). Semidouble, Korean Group chrysanthemum. H 28–36in (70–90cm), S 2ft (60cm). In early and midfall, bears rich coppery-red flowers, 2in (5cm) across, with yellow centers, some with tufts of petals in the center. Z7–10

***C.* 'Dulwich Pink'.** Single, Korean Group chrysanthemum. H 30in (75cm), S 2ft (60cm). In mid- to late fall, bears flowers, 3in (7cm) across, that open dark yellowish-pink and become paler with maturity. Z7–11

***C.* 'Emperor of China'** (illus. p.252). Quill-shaped, Rubellum Group chrysanthemum. H 4ft (1.2m), S 2ft (60cm). Bears silvery-pink flowers, 2in (5cm) across, in late fall above red-tinted leaves. Z6–9

***C.* 'Enbee Wedding'** (illus. p.252). Single, florists' spray chrysanthemum. H 4ft (1.2m), S 2½ft (75cm). Has light pink flowers, to 3in (8cm) across, in early fall. Good for exhibition. Z9–11

***C.* 'Fairweather'.** Incurved, florists' chrysanthemum. H 3½ft (1.1m), S 2ft (60cm). Bears pale purplish-pink flowers, 5½in (14cm) across, in late fall. Good for exhibition. Z10–12 (min. 41–50°F/5–10°C)

C. frutescens. See *Argyranthemum frutescens*. **'Jamaica Primrose'** see *A.* 'Jamaica Primrose'. **'Mary Wootton'** see *A.* 'Mary Wootton'.

***C.* 'George Griffiths'** (illus. p.253). Fully reflexed, florists' chrysanthemum. H 4–5ft (1.3–1.5m), S 2½ft (75cm). Produces deep red flowers, to 5½in (14cm) across when disbudded, in early fall. Excellent for exhibition. Z9–11

***C.* 'Ginger Nut'.** Intermediate, florists' chrysanthemum. H 4ft (1.2m), S 2–2½ft (60–75cm). Bears tightly incurving, light bronze flowers, to 5½in (14cm) across when disbudded, occasionally closing at top to form a true incurved flower, in early fall. Good for exhibition. Z10–11

***C.* 'Golden Chalice'** (illus. p.253). Single, florists' charm chrysanthemum. H and S 3ft (1m). In late fall, bears yellow flowers, 1in (25cm) across. Good for exhibition. Z9–11

***C.* 'Golden Gigantic'.** Tightly incurved or loosely reflexed, florists' chrysanthemum. H 4½ft (1.3m), S 1ft (30cm). Bears large, gold flowers, 10–11in (25–27cm) across, when disbudded, in late fall. Good for exhibition. Z10–12 (min. 41–50°F/5–10°C)

***C.* 'Goldengreenheart'.** Single, Korean Group chrysanthemum. H and S 24–28in (60–70cm). Easy and reliable, bearing pale orange flowers, with green centers, from mid- to late fall, sometimes later. Younger flowers have a dark red spot at the base of each floret. Z7–10

***C.* 'Golden Woolman's Glory'.** Single, florists' chrysanthemum. H 5ft (1.5m), S 3ft (1m). Golden flowers, to 7in (18cm) across when disbudded, are borne in late fall. Excellent for exhibition. Z10–12 (min. 41–50°F/5–10°C)

***C.* 'Grandchild'** (illus. p.253). Double reflexed, Korean Group chrysanthemum. H 18in (45cm), S 16in (40cm). Bears pale purple-pink blooms, 2in (5cm) across, in early fall. Z7–10

C. haradjanii. See *Tanacetum haradjanii*.

C. hosmariense. See *Rhodanthemum hosmariense*.

***C.* 'Innocence'** (illus. p.252). Single, Rubellum Group chrysanthemum. H 32in (80cm), S 20in (50cm). Bears very pale pink flowers, 2½in (6cm) across, each with several layers of petals and a narrow, white ring around the green-centered, yellow central disc, in mid- to late fall over red-tinted leaves. Z7–10

***C.* 'Jante Wells'.** Semipompom, Korean Group chrysanthemum. H 2ft (60cm), S 18in (45cm). Has orange-yellow blooms, 1½in (4cm) across, in midfall. Needs a sheltered position. Z7–10

***C.* 'John Wingfield'.** Reflexed, florists' chrysanthemum. H 5ft (1.5m), S 1½–2ft (45–60cm). In late fall, bears white, often pink-flushed, flowers, 5in (12cm) across when disbudded. Good for exhibition. Z8–10

***C.* 'Julia Peterson'.** Anemone-centered, florists' spray chrysanthemum. H and S 2ft (60cm). Bears scented, small, double, deep red-pink blooms in fall. Z6–10

***C.* 'Keith Luxford'.** Incurved, florists' chrysanthemum. H 5ft (1.5m), S 1½ft (45cm). Bears pink flowers, 8–10in (21–25cm) across when disbudded, in late fall. Good for exhibition. Z10–12 (min. 41–50°F/5–10°C)

***C.* 'Maria'.** Florists' pompom chrysanthemum. H 1½ft (45cm), S 1–2ft (30–60cm). Bears abundant pink flowers, to 1½in (4cm) across, in early fall. Z6–9

***C.* 'Marian Gosling'.** Reflexed, florists' chrysanthemum. H 4–4½ft (1.2–1.3m), S 24–28in (60–70cm). Bears pale pink flowers, to 5½in (14cm) across when disbudded, in early fall. Good for exhibition. Z10–12 (min. 41–50°F/5–10°C)

***C.* 'Marion'.** Reflexed, florists' spray chrysanthemum. H 4ft (1.2m), S 2½ft (75cm). Produces pale yellow flowers, to 3in (8cm) across, from late summer. Z9–11

***C.* 'Mary Stoker'** (illus. p.253). Single, Rubellum Group chrysanthemum. H 30in (75cm), S 2ft (60cm). Bears slightly ragged-looking, creamy-apricot flowers, 2in (5cm) across, each with a domed, yellow center, in midfall. Tends to run at the roots. Z6–9

***C.* 'Mason's Bronze'.** Single, florists' chrysanthemum. H 4½–5ft (1.3–1.5m), S to 3ft (1m). Has bronze flowers, to 5in (12cm) across, in late fall. Excellent for exhibition. Z10–11

C. maximum of gardens. See *Leucanthemum* x *superbum*.

***C.* 'Mei-kyo'.** Florist's semipompom chrysanthemum. H and S 20in (50cm). Produces blooms, 1in (25cm) across, in light purplish-pink, with deeper tones at the centers, in mid- to late fall. Good for exhibition. Z7–10

***C.* 'Mrs. Jessie Cooper'** (illus. p.253). Single, Rubellum Group chrysanthemum. H 36in (90cm), S 2ft (60cm). Bears vivid cerise-pink, flowers, 2in (5cm) across, each with a slender, white ring around the domed, yellow center, in mid- and late fall above broad, dark green leaves. Z7–10

***C.* 'Myss Saffron'.** Double reflexed, florists' spray chrysanthemum. H 34in (85cm), S 30in (75cm). In late summer and early fall, bears erect sprays of yellow flowers, 2½in (6cm) across, which fade to cream. Z9–11

***C.* 'Nantyderry Sunshine'** (illus. p.253). Florists' semipompom chrysanthemum. H 30in (75cm), S 16in (40cm). In fall, bears open, clear yellow blooms, 1¼in (3cm) across, with brighter tints and orange-yellow-marked centers, before becoming uniformly clear yellow. Excellent for exhibition. Z7–10

***C.* 'Nell Gwynn'** (illus. p.252). Single, Korean Group chrysanthemum. H 30in (75cm), S 2ft (60cm). Bears rose-pink flowers, 2¾in (6.5cm) across, each with a primrose-yellow ring around the yellow center, in late summer and early fall above broad, mid-green leaves. Z6–9

C. parthenium. See *Tanacetum parthenium*.

***C.* 'Paul Boissier'** (illus. p.253). Semidouble, Rubellum Group chrysanthemum. H 3–4ft (1–1.2m), S 2ft (60cm). Has orange-bronze flowers, 2in (5cm) across, with sharp-pointed petals, in mid- to late fall. Z7–10

***C.* 'Pennine Alfie'.** Spoon-shaped, florists' spray chrysanthemum. H 4ft (1.2m), S 2–2½ft (60–75cm). Bears flowers, to 2½–3in (6–8cm) across, with orange florets, shading to deep red at the bases, in early fall. Suitable for exhibition. Z9–11

***C.* 'Pennine Flute'.** Quill-shaped, florists' spray chrysanthemum. H 4ft (1.2m), S 2–2½ft (60–75cm). Similar to *C.* 'Pennine Alfie', but has pink flowers. Z9–11

***C.* 'Pennine Oriel'** (illus. p.252). Anemone-centered, florists' spray

chrysanthemum. H 4ft (1.2m), S 2–2½ft (60–75cm). White flowers, to 3½in (9cm) across, are borne in early fall. Very good for exhibition. Z9–11

***C.* 'Perry's Peach'** (illus. p.253). Single, Korean Group chrysanthemum. H 20in (50cm), S 16in (40cm). Bears peach-pink flowers, 2in (5cm) across, each with a narrow, cream band around the golden-yellow center, in midfall over red-tinted leaves. Z7–10

***C.* 'Peterkin'.** Florists' semipompom chrysanthemum. H and S 20in (50cm). Has small leaves. In mid- and late fall, bears golden-yellow flowers, 1in (25cm) across, with small, yellow centers; each petal is tipped in rusty-orange, becoming paler with age. Z7–10

***C.* 'Peter Rowe'.** Incurved, florists' chrysanthemum. H 4½ft (1.3m), S 2–2½ft (60–75cm). Produces yellow flowers, to 5½in (14cm) across, in early fall. Ideal for exhibition. Z9–11

***C.* 'Picasso'.** Florists' semipompom chrysanthemum. H 16–22in (45–55cm), S 18in (45cm). Produces abundant, small, orange-pink flowers, each shading to deeper tones toward the center, from mid- to late fall. Z6–10

***C.* 'Primrose Fairweather'.** Incurved, florists' chrysanthemum. H 3–3½ft (1–1.1m), S to 2½ft (75cm). Bears pale yellow flowers, to 5½–6in (14–15cm) across, in late fall. Good for exhibition. Z10–11

***C.* 'Primrose John Hughes'.** Perfectly incurved, florists' chrysanthemum. H 4ft (1.2m), S 2–2½ft (60–75cm). Bears primrose-yellow flowers, 5–5½in (12–14cm) across, in late fall. Good for exhibition. Z10–11

***C.* 'Primrose West Bromwich'.** Fully reflexed, florists' chrysanthemum. H 7ft (2.2m), S 1½–2ft (45–60cm). Pale yellow flowers, to 7in (18cm) or more across, when disbudded, are borne in midfall. Use only for exhibition. Z9–11

***C.* 'Purleigh White'** (illus. p.252). Florists' semipompom chrysanthemum. H and S 20in (50cm). Has small leaves. In mid- and late fall, bears white flowers, 1in (25cm) across, slightly blushed in pink, each with a small, yellow center. Z6–9

***C.* 'Purple Pennine Wine'.** Reflexed, florists' spray chrysanthemum. H 4ft (1.2m), S 2–2½ft (60–75cm). Bears purplish-red flowers, to 3in (8cm) across, in early fall. Very good for exhibition. Z7–10

***C.* 'Ringdove'.** Single, florists' charm chrysanthemum. H and S 3ft (1m). Bears abundant pink flowers, 1in (25cm) across, in late fall. Ideal for exhibition. Z9–11

***C.* 'Robeam'.** Reflexed, florists' spray chrysanthemum. H 5ft (1.5m), S 2½–3ft (75–100cm). Produces yellow flowers, to 3in (8cm) across, in late fall. Good for exhibition. Z10–11 (min. 41°F/5°C)

***C.* 'Rose Yvonne Arnaud'.** Fully reflexed, florists' chrysanthemum. H 4ft (1.2m), S 2–2½ft (60–75cm). A sport of *C.* 'Yvonne Arnaud', producing red flowers in early fall. Z10–11

***C.* 'Roy Coopland'.** Intermediate to loosely incurved, florists' chrysanthemum. H 4½ft (1.3m), S 2ft (60cm). Bears bronze flowers, 6in (15cm) across when disbudded, in late fall. Good for exhibition. Z10–11 (min. 41°F/5°C)

***C.* 'Ruby Mound'** (illus. p.253). Reflexed, Korean Group chrysanthemum. H 36in (90cm), S 32in (80cm). Prolifically bears fully double, rich deep maroon flowers, 2½in (6cm) across, in mid- and late fall. Z9–11

***C.* 'Ruby Raynor'.** Double reflexed, Korean Group chrysanthemum. H 32in (80cm), S 20in (50cm). In fall, bears bright orange-yellow blooms, 3in (8cm) across, with bronze shades at the centers. Z7–10

***C.* 'Rumpelstilzchen'** (illus. p.253). Single, Korean Group chrysanthemum. H 2ft (60cm), S 20in (50cm). Bears rich red flowers, 1½in (4cm) across, with several layers of petals and a narrow, yellow ring around the yellow center, in early fall. Dislikes wet soil in winter. Z7–10

***C.* 'Rytorch'.** Single, florists' spray chrysanthemum. H 5ft (1.5m), S 30–36in (75–100cm). Produces light bronze, yellow-centered flower heads, to 3in (8cm) across, in late fall. Z10–12 (min. 41–50°F/5–10°C)

***C.* 'Salmon Fairie'.** Florists' pompom chrysanthemum. H 1–2ft (30–60cm), S 2ft (60cm). Similar to *C.* 'Bronze Fairie', but has salmon flowers. Z7–10

***C.* 'Sea Urchin'** (illus. p.253). Spider-form, Korean Group chrysanthemum. H 2ft (60cm), S 20in (50cm). Produces fully double, lemon-yellow flowers, 3in (7cm) across, in early and midfall. Dislikes winter wet. Z9–11

***C. segetum*.** See *Glebionis segetum*.

***C. serotinum*.** See *Leucanthemella serotina*.

***C.* 'Spartan Seagull'** (illus. p.252). Single, Korean Group chrysanthemum. H 28in (70cm), S 20in (50cm). Slightly ruffled, white flowers, 3in (7cm) across, are borne in early fall. Has dark green leaves. Z7–10

***C.* 'Starlet'.** Spoon-shaped, Korean Group chrysanthemum. H 2ft (60cm), S 22in (55cm). Bears light bronze-orange blooms, 2in (5cm) across, in early to midfall. Z7–10

***C.* x *superbum*.** See *Leucanthemum* x *superbum*.

***C.* 'Talbot Jo'.** Single, florists' spray chrysanthemum. H 4½ft (1.3m), S 2½ft (75cm). Bears yellow-centered, pink flower heads, 3in (8cm) across, in early fall. Good for exhibition. Z6–9

***C.* 'Tapestry Rose'** (illus. p.253). Single, Korean Group chrysanthemum. H 36in (90cm), S 2ft (60cm). Slightly messy, yellow-centered, rich rose-pink flowers, 1½in (4cm) across, are produced in midfall. Z7–10

***C. tricolor*.** See *Ismelia carinata*.

***C. uliginosum*.** See *Leucanthemella serotina*.

***C.* 'Vagabond Prince'.** Vigorous, double, florists' spray chrysanthemum. H 32in (80cm), S 20in (50cm). In fall, produces flower heads, 2in (5cm) across, with several layers of purplish-pink petals. Z7–10

***C.* 'Venice'.** Reflexed, florists' chrysanthemum. H 4ft (1.2m), S 2–2½ft (60–75cm). Pink flowers, to 6in (15cm) across, are produced in early fall. Good for exhibition. Z9–11

***C.* 'Wendy'.** Reflexed, florists' spray chrysanthemum. H 4ft (1.2m), S 2–2½ft (60–75cm). Produces pale bronze flowers, to 3in (8cm) across, in early fall. Excellent for exhibition. Z7–10

C. weyrichii, syn. *Dendranthema weyrichii*. Mat-forming, rhizomatous perennial. H 12in (30cm), S 18in (45cm). In fall, bears single, yellow-centered, pink or white flowers, 2in (5cm) across. Z6–9

***C.* 'Wills Wonderful'.** Single, Korean Group chrysanthemum, forming a dense, bushy mound. H 2–4ft (60–120cm), S 2ft (60cm). In mid- to late fall, bears dark red-pink flowers, to 2in (5cm) across, each with a white band aroundthe yellow center. Z7–10

***C.* 'Yellow John Hughes'** (illus. p.253). Incurved, florists' chrysanthemum. H 4ft (1.2m), S 2–2½ft (60–75cm). Bears yellow flowers, 5–5½in (12–14cm) across when disbudded, in late fall. Excellent for exhibition. Z10–11 (min. 41°F/5°C)

***C.* 'Yellow Pennine Oriel'.** Anemone-centered, florists' spray chrysanthemum. H 3½ft (1.1m), S 18in (45cm). In early fall, bears pale yellow flowers, 3½in (9cm) across, with brighter centers. Good for borders and cutting. Z7–10

***C.* 'Yochesapeake'.** See *C.* CHESAPEAKE.

***C.* 'Yvonne Arnaud'.** Fully reflexed florists' chrysanthemum. H 4ft (1.2m), S 2–2½ft (60–75cm). Bears purple flowers, to 5in (12cm) across, in early fall. Z9–11

CHRYSOGONUM

ASTERACEAE/COMPOSITAE

Genus of one species of summer- to fall-flowering perennial. Suits a rock garden. Needs partial shade and moist but well-drained, humus-rich soil. Propagate by division in spring or by seed when fresh.

C. virginianum illus. p.344.

CHRYSOSPLENIUM

Golden saxifrage

SAXIFRAGACEAE

Genus of creeping annuals and perennials, grown for their foliage and early spring flowers. Requires moist, shady conditions. Propagate by division or by seed in fall, some species also by runners or by bulbils.

C. macrophyllum illus. p.256.

CHUSQUEA

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.

C. culeou (Chilean bamboo) illus. p.288.

***C. gigantea*.** Vigorous, evergreen, open, clump-forming bamboo. H to 40ft (15m), S 25ft (8m). Has widely spaced, bright green canes, turning yellow between the nodes, and linear, mid-green leaves. New canes have creamy-white sheaths that last for 2 or more years. Z8–11

CICERBITA,

SYN. MULGEDIUM

ASTERACEAE/COMPOSITAE

Genus of erect perennials, grown for their attractive flower heads. Needs shade and damp but well-drained soil. Propagate by division in spring or by seed in fall. Some species may be invasive.

C. alpina, syn. *Lactuca alpina* (Mountain sow thistle). Branching, upright perennial. H to 8ft (2.5m), S 2ft (60cm). Mid-green leaves are lobed, with a large, terminal lobe. Bears elongated panicles of thistlelike, pale blue flower heads in summer. Z3–9

C. bourgaei, syn. *Lactuca bourgaei*. Rampant, erect perennial. H to 6ft (2m), S 2ft (60cm). Leaves are oblong to lance-shaped, toothed, and light green. Bears many-branched panicles of thistlelike, mauve-blue or purplish-blue flower heads in summer. Z4–9

CICHORIUM

Chicory, Endive

ASTERACEAE/COMPOSITAE

Genus of annuals and perennials, grown mainly as ornamental plants (*C. intybus* has edible leaves). Needs full sun and well-drained soil. Propagate by seed in fall or spring. ⓣ Contact with all parts of the plants may irritate skin or aggravate skin allergies.

C. intybus (Chicory) illus. p.242.

***Cimicifuga*.** See *Actaea*.

Cineraria cruentus of gardens**.** See *Pericallis* x *hybrida*.

***Cineraria* x *hybridus*.** See *Pericallis* x *hybrida*.

CINNAMOMUM

LAURACEAE

Genus of evergreen trees and shrubs, grown for their foliage and to provide shade. Requires full light or partial shade and fertile, moisture-retentive, but well-drained soil. Water containerized specimens freely when in full growth, but less at other times. May be pruned if necessary. May be an invasive weed in some regions. Propagate by seed in spring or semiripe cuttings in summer.

C. camphora (Camphor tree). Moderately fast-growing, evergreen, rounded tree. H and S 40ft (12m) or more. Ovate, lustrous, rich green leaves, reddish or coppery when young, tinted blue-gray beneath, are camphor-scented when bruised. In spring, bears insignificant flowers. Invasive in some warmer areas. Z11–12

CIRSIUM

ASTERACEAE/COMPOSITAE

Genus of annuals, biennials, and perennials. Most species are not cultivated—indeed, some are pernicious weeds—but *C. rivulare* has decorative flower heads. Tolerates sun or shade and any, except wet, soil. Propagate by division in spring or by seed in fall.

***C. rivulare* 'Atropurpureum'.** Erect perennial. H 4ft (1.2m), S 2ft (60cm). Bears heads of pincushionlike, deep crimson flowers on erect stems in summer. Deeply cut, Leaves are narrowly ovate to oblong or lance-shaped and deeply cut, with weakly spiny margins. Z5–9 (min. 50°F/10°C)

CISSUS

VITACEAE

Genus of evergreen perennials, shrubs, and climbers, grown for their attractive foliage. Greenish, mainly summer flowers, are insignificant. Provide fertile, well-drained soil, with semishade in summer. Water regularly, less in cold weather. Needs tying to supports. Thin out crowded

stems in spring. Propagate by semiripe cuttings in summer.
C. antarctica (Kangaroo vine) illus. p.463.
C. bainesii. See *Cyphostemma bainesii*.
C. discolor. Moderately vigorous, evergreen, tendril climber with slender, woody stems. H to 10ft (3m). Ovate, pointed leaves, 3–10in (8–25cm) long, are deep green with silver bands above, maroon beneath. Z10–12 (min. 41°F/5°C)
C. hypoglauca (Water vine). Evergreen, woody-stemmed, scrambling climber. H 30–80ft (10–25m). The pale green leaves are divided into 4 or 5 ovate leaflets that are blue-gray beneath. Z10–12 (min. 45°F/7°C)
C. juttae. See *Cyphostemma juttae*.
C. rhombifolia, syn. *Rhoicissus rhombifolia* (Grape ivy). Moderately vigorous, evergreen, woody-stemmed, tendril climber. H 10ft (3m) or more. Has lustrous leaves divided into 3 coarsely toothed leaflets. Z10–12 (min. 41°F/5°C)
C. striata, syn. *Ampelopsis sempervirens, Parthenocissus striata, Vitis striata* (Ivy of Uruguay). Fast-growing, evergreen, woody-stemmed, tendril climber. H 30ft (10m) or more. Has leaves of 3 to 5 ovate, serrated, lustrous, green leaflets. Mature plants may produce pea-shaped, glossy, black berries in fall. Z10–11
C. voinieriana. See *Tetrastigma voinierianum*.

CISTUS

Rock rose, Sun rose

CISTACEAE

Genus of evergreen shrubs, grown for their succession of freely borne, short-lived, showy flowers. Good in coastal areas, withstanding sea winds well. Does best in full sun and light, well-drained soil. Resents being transplanted. Cut out any dead wood in spring, but do not prune hard. Propagate species by softwood or greenwood cuttings in summer or by seed in fall, hybrids and cultivars by cuttings only in summer.
***C.* x *aguilarii* 'Maculatus'** illus. p.150.
C. albidus. Evergreen, bushy shrub. H and S 3ft (1m). Leaves are oblong and white-felted. Saucer-shaped, pale rose-pink flowers, each with a central, yellow blotch, open in early summer. Z6–9
C. algarvensis. See *Halimium ocymoides*.
***C.* x *argenteus* 'Peggy Sammons'** illus. p.153.
***C.* x *bornetianus* 'Jester'.** Evergreen, compact shrub. H and S 32in (80cm). Has narrow, slightly undulating, gray-green leaves and warm, light pink flowers, each white in the center. Z6–10
C.* x *corbariensis. See *C.* x *hybridus*.
C. creticus, syn. *C. incanus* subsp. *creticus* (Rock rose), illus. p.154.
***C. crispus* 'Sunset'.** See *C.* x *pulverulentus* 'Sunset'.
C.* x *cyprius illus. p.150. **var. *ellipticus* 'Elma'** (syn. *C.* 'Elma'), is an evergreen shrub. H and S 6ft (2m). Has lance-shaped, glossy leaves and bears white flowers with yellow stamens in summer. Z6–10
C.* x *dansereaui, syn. *C.* x *lusitanicus* of gardens. Evergreen, bushy, compact shrub. H and S 3ft (1m). Leaves are narrowly oblong and dark green. From early to mid- summer, produces saucer-shaped, white flowers, with faint yellow and crimson marks at the base of each petal. Z6–9.
'Gordon Cooper', H 18in (45cm), S 6ft (2m), is a vigorous, spreading shrub with ovate to elliptic leaves, deeply veined above; each petal has a distinctive, lance-shaped, maroon-red marks at the base.
'Jenkyn Place' flowers very freely, and blooms over a longer season.
***C.* 'Elma'.** See *C.* x *cyprius* var. *ellipticus* 'Elma'.
C.* x *hybridus, syn. *C.* x *corbariensis* (Rock rose), illus. p.150. **Rospico ('Rencis')** is a bushy, dense, evergreen, shrub. H 3ft (1m) S 5ft (1.5m). Has wrinkled, wavy-margined, dark green leaves edged with light golden yellow, often pink-tinted in winter. Freely produces white flowers with central yellow blotches in late spring and early summer. Z6–9
C. incanus* subsp. *creticus. See *C. creticus*.
C. ladanifer, syn. *C. ladaniferus*, illus. p.150.
C. ladaniferus. See *C. ladanifer*.
C. laurifolius. Evergreen, bushy, dense shrub. H and S 6ft (2m). Has ovate, aromatic, sticky, dark blue-green leaves. In summer, bears erect, branched cymes of 3–8 saucer-shaped, white flowers, each with a central, yellow blotch. Z6–9
***C.* x *laxus*.** Vigorous, mound-forming shrub. H 5ft (1.5m), S 6ft (2m). Has short-stalked, wavy-edged leaves and bears white flowers, each marked with yellow at the petal bases, with a central boss of golden yellow stamens, from early to late summer. Z7–10. **'Snow White'** is rounded, and bears abundant, pure white flowers.
***C.* x *lenis* 'Grayswood Pink'.** Evergreen, low-growing, spreading shrub. H 16in (40cm), S 2ft (60cm). Has narrowly ovate, grayish-green leaves. Produces large, papery, saucer-shaped, clear pink flowers, with white centers and conspicuous, yellow stamens, from early to midsummer. Z6–9
C.* x *lusitanicus of gardens. See *C.* x *dansereaui*.
C. monspeliensis (Montpellier rock rose). Evergreen, bushy shrub. H 3ft (1m), S 5ft (1.5m). Has narrow, linear to lance-shaped, deeply-veined, dark green leaves. Freely bears dense cymes of small, white flowers from early to midsummer. Z6–9
***C.* x *pulverulentus* 'Sunset'**, syn. *C. crispus* 'Sunset'. Compact, spreading shrub. H 2ft (60cm), S 36in (90cm). Has oblong, wavy-margined, grayish-green leaves. Freely bears clusters of rose-pink flowers, with yellow centers, at stem tips in summer. Z6–10
***C.* x *purpureus*.** Evergreen, bushy, rounded shrub. H and S 3ft (1m). Leaves are narrowly lance-shaped and gray-green. Produces saucer-shaped, deep purplish-pink flowers, each blotched with deep red, from early to midsummer. Z6–9.
'Snow Fire', H 4ft (1.2m), S 5ft (1.5m), has distinctive, red-tinged stems. For a long period from late spring, bears axillary clusters of white flowers with pointed, reddish-maroon marks at the petal bases.
C. revolii of gardens. See x *Halimiocistus sahucii*.
C. salviifolius illus. p.150.
C.* x *skanbergii illus. p.152.
C. wintonensis. See x *Halimiocistus wintonensis*.

x ***Citrofortunella microcarpa.*** See *Citrus* x *microcarpa*.
x ***Citrofortunella mitis.*** See *Citrus* x *microcarpa*.

CITRUS

SYN. x CITROFORTUNELLA, FORTUNELLA, PONCIRUS

RUTACEAE

Genus of complex hybrids of evergreen, often spiny trees and shrubs, grown for their fruits and often scented white flowers. The fruits take about one year to mature. In frost-prone regions, grow in a cool or temperate greenhouse or conservatory. In warmer areas, grow as specimen plants or in a fruit garden. Needs sun and moist but well-drained, neutral to slightly acidic soil. Propagate by seed under glass in spring or by semiripe cuttings in summer. Red spider mites, whiteflies, scale insects, and mealybugs may be a problem under glass.
C.* x *microcarpa, syn. x *Citrofortunella microcarpa*, x *C. mitis*, *Citrus mitis* (Calamondin), illus. p.458.
C. mitis. See *C.* x *microcarpa*.
C. trifoliata, syn. *Poncirus trifoliata* (illus. p.142). Deciduous, bushy shrub or tree. H and S 15ft (5m). Sturdy, spiny, green shoots have dark green leaves, each with 3 ovate leaflets. Bears fragrant, white flowers, with 4 or 5 large petals in late spring and often again in fall. Rounded, inedible fruits are to 1½in (4cm) across. Z6–11

CLADANTHUS

Palm Springs daisy

ASTERACEAE/COMPOSITAE

Genus of hummock-forming, branched annuals, grown for their fragrant foliage and daisylike flower heads. Grow in sun and in reasonably fertile, very well-drained soil. Deadhead to prolong flowering. Propagate by seed sown outdoors in midspring.
C. arabicus illus. p.321.

CLADRASTIS

PAPILIONACEAE/LEGUMINOSAE

Genus of deciduous, summer-flowering trees, grown for their pendent, wisterialike flower clusters and fall foliage. Requires full sun and fertile, well-drained soil. Propagate by seed in fall or by root cuttings in late winter. The wood is brittle: old trees are prone to damage by strong winds.
C. kentukea, syn. *C. lutea* (Yellow wood), illus. p.79.
C. lutea. See *C. kentukea*.

CLARKIA

SYN. GODETIA

ONAGRACEAE

Genus of annuals, grown for their flowers, which are good for cutting. Grow in sun and in reasonably fertile, well-drained soil. Avoid rich soil as this encourages vegetative growth at the expense of flowers. Propagate by seed sown outdoors in spring, or in early fall in mild areas. Botrytis may be troublesome.
C. amoena. Fast-growing annual with upright, thin stems. H to 2ft (60cm), S 12in (30cm). Has lance-shaped, mid-green leaves. Spikes of 5-petaled, single or double flowers, in shades of lilac to pink, are produced in summer. Tall forms, H 2ft (60cm), bear double flowers in shades of pink or red. Z2–11. **Azalea-flowered Mixed** cultivars, H 18in (45cm), S 10in (25cm), produce semidouble or double flowers in a range of colors, often with a contrasting blotch at each petal base. **Satin Series**, dwarf, H to 8in (20cm), produce single flowers in various colors, many with white margins or contrasting centers.

CLAYTONIA

PORTULACACEAE

Genus of deciduous and evergreen perennials with succulent leaves. Best grown in an alpine house or scree bed. Tolerates sun or shade and prefers well-drained soil. Propagate by seed or division in fall. May be difficult to grow.
C. megarhiza. Evergreen, basal-rosetted perennial with a long tap root. H ½in (1cm), S 3in (8cm). Leaves are spoon-shaped and fleshy. Bears small heads of tiny, bowl-shaped, white flowers in spring. Prefers sun and gritty soil. Prone to aphid attack. Z6–9. **var. *nivalis*** illus. p.351.
C. virginica (Spring beauty). Clump-forming perennial with flat, black tubers. H 4in (10cm), S 8in (20cm) or more. Narrowly spoon-shaped leaves, reddish when young, later turn green and glossy. Branched stems bear cup-shaped, white or pink flowers, striped deep pink, in early spring. Needs shade. Z6–9

CLEISTOCACTUS

SYN. BORZICACTUS

CACTACEAE

Genus of columnar, perennial cacti with branched, cylindrical, much-ribbed stems with spines. One of the faster-growing cacti, some reaching 6ft (2m) in 5 years or less. Tubular, diurnal flowers contain plenty of nectar and are pollinated by hummingbirds. Needs full sun and very well-drained soil. In frost-prone areas grow in a warm greenhouse; in warmer areas grow in a border with other cacti and succulents. Propagate by seed or stem cuttings in spring or summer.
C. baumannii. Erect, then prostrate, perennial cactus. H 3ft (1m) or more, S 15ft (5m). Thick stems produce long, uneven, variable-colored spines. Has S-shaped, tubular, bright orange-red flowers in spring–summer. Z10–11 (min. 41°F/5°C)
C. celsianus. See *Oreocereus celsianus*.
C. smaragdiflorus. Erect, then prostrate, perennial cactus. H 5ft (1.5m), S 20ft (6m). Similar to *C. baumannii*, but produces straight, tubular flowers with green-tipped petals. Z10–11 (min. 41°F/5°C)
C. strausii (Silver torch) illus. p.479.
C. trollii. See *Oreocereus trollii*.

CLEMATIS

Old man's beard, Travellers' joy

RANUNCULACEAE

Genus of evergreen or deciduous, mainly twining climbers and herbaceous perennials, cultivated for their abundant flowers, often followed by decorative seed heads, and grown on walls and trellises and together with trees, shrubs and other host plants. Only early-flowering species are evergreen, although some later-flowering species are semievergreen. Most species have nodding, bell-shaped flowers, with 4 petals (botanically known as perianth segments), or flattish flowers, each usually with 4–6 generally pointed petals. Large-flowered cultivars also bear flattish flowers, but with 4–10 petals. Flower color may vary according to climatic conditions: in general, the warmer the climate, the darker the flower color. May be grown in partial shade or full sun, but prefers rich, well-drained soil with roots shaded. Propagate cultivars in early summer by softwood or semiripe cuttings or layering, species from seed sown in fall. Aphids, mildew and clematis wilt may cause problems.

Clematis may be divided into groups according to their flowering seasons, habit and pruning needs. See also feature panel pp.198–200.

Group 1

Early-flowering species and early small-flowered cultivars prefer a sheltered, sunny site with well-drained soil. Small, single flowers, either bell-shaped or open-bell-shaped, ¼–2in (2–5cm) long, or saucer-shaped, 1¼–2in (4–5cm) across, are borne on the previous season's ripened shoots in spring or, occasionally, in late winter. Leaves are evergreen and glossy, or deciduous, and usually divided into 3 lance-shaped, 5in (12cm) long leaflets or into 3 fernlike, 2in (5cm) long leaflets. ***C. alpina*, *C. macropetala* and their cultivars** tolerate cold, exposed positions. Small, bell-shaped to open bell-shaped, single, semidouble, or double flowers, 1¼–3in (3–7cm) across, are borne on the previous season's ripened shoots in spring, occasionally also on the current season's shoots in summer. Deciduous, pale to mid-green leaves are divided into 3–5 lance-shaped to broadly oblong, toothed leaflets, 1¼in (3cm) long.

***C. montana* and its cultivars** are vigorous, deciduous climbers, suitable for growing over large buildings and trees. Small, flat to saucer-shaped, usually single flowers, 2–3in (5–7cm) across, are borne on the previous season's ripened shoots in late spring. Leaves are mid- to purplish-green and divided into 3 lance-shaped to broadly , serrated leaflets, 3in (8cm) long with pointed tips.

Prune all group 1 clematis after flowering to allow new growth to be produced and ripened for the following season. Remove dead or damaged stems and cut back other shoots that have outgrown their allotted space. This will encourage new growth to bear flowers in the following season.

Group 2

Early large-flowered cultivars bearing mostly saucer-shaped, single, semidouble, or fully double flowers, 4–8in (10–20cm) across, that are borne on the previous season's ripened shoots, in late spring and early summer, and on new shoots in mid- and late summer. Generally the second flush of flowers on semidouble and double forms produces single flowers. Deciduous, pale to mid-green leaves are usually 4–6in (10–15cm) long and divided into 3 ovate or lance-shaped leaflets, or are simple and ovate, and to 4in (10cm) long.

Prune before new growth starts, in early spring. Remove dead or damaged stems and cut back all remaining shoots to where strong buds are visible. These buds provide a framework of second-year shoots which, in turn, produce sideshoots that flower in late spring and early summer. The flowers may then be removed. Young shoots bear more flowers later in the summer.

Group 3

Late large-flowered cultivars producing outward-facing, usually saucer-shaped, single flowers, 3–6in (7–15cm) across, borne on new shoots in summer or early fall. Leaves are deciduous and similar to those of early cultivars (group 2), described above.

Late-flowering species and late small-flowered cultivars that bear small, single or double flowers on the current season's shoots in summer–fall. Flowers vary in shape and may be star-shaped, tubular, bell-shaped, flattish or resembling nodding lanterns; they vary in size from ½in (1cm) to 4in (10cm) across. Have generally deciduous, pale to dark green or gray-green leaves divided into 3 lance-shaped to broadly leaflets, each ½in (1cm) long, or hairy and/or toothed leaves divided into 5 or more lance-shaped to broadly leaflets, each ½–4in (1–10cm) long.

Herbaceous species and cultivars producing single flowers that are either saucer-shaped, ½–¾in (1–2cm) across, or bell-shaped or tubular, ½–1½in (1–4cm) long, and are produced on the current season's shoots in summer. Mid- to dark green or gray-green leaves are simple and lance-shaped to elliptic, 1–6in (2.5–15cm) long, or are divided into 3–5 lance-shaped to ovate, serrated leaflets, each 4–6in (10–15cm) long with a pointed tip.

Prune all group 3 clematis before new growth begins, in early spring. Cut back all the previous season's stems to a pair of strong buds, 6–8in (15–20cm) above soil level.

***C.* 'Abundance'**, syn. *C. viticella* 'Abundance' (illus. p.200). Late small-flowered clematis (group 3). H 6–10ft (2–3m), S 3ft (1m). Produces flattish, deep purplish-red flowers, 2in (5cm) across, with cream anthers, in summer. Z4–9

***C.* Alabast ('Poulala').** Vigorous, long-flowering, large-flowered clematis (group 2). H 10ft (3m), S 3ft (1m). Freely produces creamy-green, rounded, large flowers 5–6in (12–15cm) across, with creamy-yellow anthers, in late spring and again from mid- to late summer. Z4–9

***C.* 'Alionushka'** (illus. p.199). Late, small-flowered clematis (group 3). H 3–4ft (1–1.2m), S 3ft (1m). In midsummer to early fall, produces single, rich mauvish-pink flowers, 2½–3in (6–8cm) across, with a satin sheen when young, with deep ridges on the reverse and crumpled edges; the petal tips recurve and twist as they age. Z4–9

***C. alpina*.** Alpina clematis (group 1). H 6–10ft (2–3m), S 5ft (1.5m). Has lantern-shaped, single, blue flowers, 1½–3in (4–7cm) long, in spring and, occasionally, summer. Forms attractive, fluffy, silvery seed heads in summer. Ideal for a north-facing or very exposed site. Z4–9.

'Columbine' see *C.* 'Columbine'.

'Constance' see *C.* 'Constance'.

'Frances Rivis' see *C.* 'Frances Rivis'.

'Frankie' see *C.* 'Frankie'.

***C.* 'Andromeda'** (illus. p.198). Early large-flowered clematis (group 2). H 6–10ft (2–3m), S 3ft (1m). Semidouble, white flowers, with bright pink stripes in the center of each sepal, are produced in spring. Blooms again, producing single flowers later in the year. Z4–9

***C.* Angelique ('Evipo017').** Compact, early large-flowered clematis (group 2). H 3–4ft (90cm–1.2m), S 3ft (1m). Produces an abundance of lilac-blue, brown-anthered flowers, 4in (10cm) across, from early summer to late fall. Z4–9

***C.* Anna Louise ('Evithree')** (illus. p.200). Compact, early large-flowered clematis (group 2). H 3–4ft (1–1.2m), S 3ft (1m). Freely produces single flowers with violet petals with a contrasting red-purple central bar, and striking brown anthers, in late spring to early summer, and again in late summer to early fall. Z4–9

***C.* Arctic Queen ('Evitwo')** (illus. p.198). Early large-flowered clematis (group 2). H 10ft (3m), S 3ft (1m). From early summer to early fall, freely produces double, clear creamy-white flowers, 4–7in (10–18cm) across, with yellow anthers. Z4–9

C. armandii (illus. p.198). Strong-growing, evergreen, early-flowering clematis (group 1). H 10–15ft (3–5m), S 6–10ft (2–3m). Bears scented, flattish, single, white flowers, 1½in (4cm) across, in early spring. Needs a sheltered, south- or south-west-facing site. Z8–10

***C.* 'Ascotiensis'.** Vigorous, late large-flowered clematis (group 3). H 10–12ft (3–4m), S 3ft (1m). Single, bright violet-blue flowers, 3½–5in (9–12cm) across, with pointed petals and brownish-green anthers, are produced in summer. Z4–9

***C.* Avant-garde ('Evipo033')** (illus. p.200). Vigorous, late small-flowered clematis (group 3). H 10ft (3m), S 3ft (1m). Produces deep red flowers to 2in (5cm) across, with central pompons of pink, petaloid stamens, in abundance from midsummer to fall. Z4–9

***C.* 'Barbara Dibley'** (illus. p.199). Early large-flowered clematis (group 2). H 8ft (2.5m), S 3ft (1m). In late spring, produces single, petunia-red flowers, to 9in (23cm) across, with carmine-red to red-purple stripes along each sepal and red-purple stamens. Z4–9

***C.* 'Barbara Jackman'** (illus. p.199). Early large-flowered clematis (group 2). H to 10ft (3m), S 3ft (1m). In early summer, produces single, bluish-mauve flowers, with crimson stripes and creamy-white stamens, followed in late summer by a further flush. Grow in semishade as flowers fade in full sun. Z4–9

***C.* 'Bees' Jubilee'.** Compact, early large-flowered clematis (group 2). H 8ft (2.5m), S 3ft (1m). In early summer, bears a profusion of single, deep pink flowers, 4–5in (10–12cm) across, with brown anthers and a central, rose-madder stripe on each petal. Prefers partial shade. Z4–9

***C.* 'Betty Corning'** (illus. p.200). Late small-flowered clematis (group 3). H to 13ft (4m), S 3ft (1m). Slightly scented, bell-shaped, lilac to pinkish-mauve flowers, 1½–2½in (4–6cm) across, are borne from early summer to early fall. Z4–9

***C.* 'Bill MacKenzie'.** Vigorous, late small-flowered clematis (group 3). H 22ft (7m), S 10–12ft (3–4m). Has dark green leaves and yellow flowers,2½–3in (6–7cm) across. Best pruned with shears. Z4–9

***C.* 'Black Prince'** (illus. p.200). Late small-flowered clematis (group 3). H to 13ft (4m), S 3ft (1m). In midsummer, produces bell-shaped, seminodding, very dark blackish-claret-red flowers, to 3½in (9cm) across, with maroon stamens. Z4–9

***C.* Blue Moon ('Evirin').** See Clair de Lune ('Evirin').

***C.* Bonanza ('Evipo031').** Vigorous, late small-flowered clematis (group 3). H 10ft (3m), S 3ft (1m). Produces blue-purple blooms to 3in (7cm) across, with pale yellow anthers, from midsummer to fall. Z4–9

***C.* Bourbon ('Evipo018')** (illus. p.200). Compact, early large-flowered clematis (group 2). H 4–6ft (1.2–2m), S 3ft (1m). Produces an abundance of vibrant, red, yellow-centered flowers, 3in (8cm) across, from early to midsummer. Z4–9

***C.* 'Broughton Star'**, syn. *C. montana* 'Broughton Star'. Vigorous Montana clematis (group 1). H 12–15ft (4–5m), S 6–10ft (2–3m). In late spring, bears semidouble to fully double, cup-shaped, dusty pink flowers, with slightly darker veins. Z5–9

***C.* 'Carnaby'.** Compact, early large-flowered clematis (group 2). H 8ft (2.5m), S 3ft (1m). In early summer, bears a profusion of single, deep pink flowers, 3–4in (8–10cm) across, with a darker stripe on each petal and red anthers. Prefers partial shade. Z4–9

***C.* x *cartmanii*.** Evergreen, clump-forming, bushy shrub (group 1) with some procumbent stems. H 8–10in (20–25cm). S 20in (50cm). Has dissected, leathery, shiny, dark green leaves varying in shape. Leafy panicles of shallowly cup-shaped, pure white flowers, ¾–1½in (2–4cm) across, with white anthers, are freely produced in early spring. Z6–10. **'Avalanche'** (illus. p.198), H and S 10–16ft (3–5m), has roughly ovate, deeply toothed leaves and white flowers flushed pale green at the base.

'Joe' (illus. p.198), H to 6ft (2m), has 3-parted, toothed leaves; procumbent stems can be trained upward.

***C.* Cassis ('Evipo020').** Vigorous, long-flowering, late large-flowered clematis (group 3). H 6–10ft (2–3m). Produces fully double, plum red, rosetted flowers, 3in (8cm) across, borne from early summer to early fall. Z4–9

***C.* Cezanne ('Evipo023').** Compact, long-flowering, early large-flowered clematis

(group 2). H 3–4ft (90cm–1.2m), S 3ft (1m). Produces sky-blue flowers, 4in (10cm) across, with broad overlapping sepals and yellow anthers, blooming from early summer to late fall. Z4–9

***C.* Chantilly ('Evipo021')** (illus. p.199). Compact, long-flowering, early large-flowered clematis (group 2). H 3–4ft (90cm–1.2m), S 3ft (1m). Bears single, occasionally semidouble, pale pink flowers, to 4in (10cm) across, the sepals with a pronounced, deeper pink central bar, in abundance from early summer to late fall. Z4–9

***C.* 'Charissima'** (illus. p.199). Free-flowering, early large-flowered clematis (group 2). H 8–10ft (2.5–3m), S 3ft (1m). In late spring to early summer, produces single flowers, 6–7in (15–18cm) across, with pointed, cerise-pink petals, a deeper pink bar and veins throughout the flower, and dark maroon anthers. Z4–9

***C. chiisanensis* 'Lemon Bells'.** See *C. koreana* var. *carunculosa* 'Lemon Bells'.

***C.* Chinook ('Evipo013').** Low growing, scandent, non-clinging, late large-flowered clematis (group 3). H 3ft (1m), S 2ft (60cm). Produces numerous, nodding, mid-violet-blue flowers, 5in (12cm) across, with twisted sepals, each with a prominent, central boss of yellow stamens, from midsummer to early fall. Z4–10

C. cirrhosa (illus. p.199). Evergreen, early-flowering clematis (group 1). H 6–10ft (2–3m), S 3–6ft (1–2m). Produces bell-shaped, cream flowers, 1¼in (3cm) across and spotted red inside, in late winter and early spring during frost-free weather. Z6–10. **var. *balearica*** has fragrant, pale cream flowers, speckled reddish-brown. **var. *purpurascens* 'Freckles'** (illus. p.200) has creamy-pink flowers, 2–3in (5–8cm) across, heavily speckled red within.

***C.* Clair de Lune ('Evirin')**, syn. *C.* Blue Moon ('Evirin'). Vigorous, early large-flowered clematis (group 2). H 8–10ft (2.5–3m), S 3–5ft (1–1.5m). Bears abundant, large, blue-purple flowers, to 5in (12cm) across, with paler central bands on the sepals and dark anthers, from late spring to early summer and again from late summer to early fall. Z4–9

C. clarkeana of gardens. See C. *urophylla* 'Winter Beauty'.

***C.* 'Columbine'** (Atragene Group), syn. *C. alpina* 'Columbine'. Early small-flowered clematis (group 1). H 6–12ft (2–4m). In early and mid-spring, produces soft lavender-blue, nodding, bell-shaped flowers, 4–2in (5cm) across, with creamy-white or green staminodes, sometimes blooming again in summer. Z4–11

***C.* 'Columella'** (Atragene Group; illus. p.200). Early small flowered clematis (group 1). H 10ft (3m), S 3ft (1m). From mid- to late spring, bears strongly scented, broadly bell-shaped, pendent, purplish-violet to deep rosy-pink flowers, to 2¾in (6.5cm) across, with yellow staminodes. Z4–11

***C.* 'Comtesse de Bouchaud'.** Strong-growing, late large-flowered clematis (group 3). H 6–10ft (2–3m), S 3ft (1m). In summer, bears a profusion of single, bright mauve-pink flowers, 3–4in (8–10cm) across, with yellow anthers. Z4–11

***C.* Confetti ('Evipo036').** Vigorous late small-flowered clematis (group 3). H 10ft (3m), S 3ft (1m). Free-flowering clematis with nodding, pink flowers produced from midsummer to fall. Z4–11

***C.* 'Constance'** (Atragene Group), syn. *C. alpina* 'Constance'. Early-flowering clematis (group 1). H 6–12ft (2–4m), S 3ft (1m). Semidouble, nodding, rich purple-pink or reddish-pink, belllike flowers, 1–2½in (2.5–6cm) across, with purple or creamy-white staminodes, are produced from early to midspring, and occasionally again in summer. Z4–9

***C.* 'Corona'** (illus. p.199). Moderately vigorous, early large-flowered clematis (group 2). H to 11½ft (3.5m), S 3ft (1m). Bears numerous single, rich velvety-crimson flowers, with red and white stamens, in late spring and early summer, followed in late summer by a further flush of slightly smaller, paler flowers. Z4–9

***C.* Crystal Fountain ('Evipo038').** Compact, early large-flowered clematis (group 2), H 4–6ft (1.5–2m), S 3ft (1m). Produces an abundance of double, deep lilac-blue flowers, to 4in (10cm) across, with a central boss of narrow staminodes, from late spring to early summer and again in early fall. Z4–9

***C.* 'Daniel Deronda'.** Vigorous, early large-flowered clematis (group 2). H 10ft (3m), S 3ft (1m). Bears double and semidouble, deep purple-blue flowers, 4–5½in (10–14cm) across, with cream anthers, then single flowers, in late summer. Z4–9

***C.* 'Doctor Ruppel'.** Early large-flowered clematis (group 2). H 8ft (2.5m), S 3ft (1m). Single flowers, 4–6in (10–15cm) across, with deep rose-pink petals with darker central bands and light chocolate anthers, are freely produced all summer. Z4–9

***C.* 'Duchess of Albany'.** Vigorous, late small-flowered clematis (group 3). H 8ft (2.5m), S 3ft (1m). In summer and early fall, bears abundant small, tuliplike, single, soft pink flowers, 2½in (6cm) long, with brown anthers and a deeper pink stripe inside each petal. Z6–10

***C.* 'Duchess of Edinburgh'.** Early large-flowered clematis (group 2). H 6–10ft (2–3m), S 3ft (1m). In summer, produces double, white flowers, 3–4in (8–10cm) across, with yellow anthers and green, outer petals. May be weak-growing. Z4–9

***C.* x *durandii*.** Semiherbaceous, late-flowering clematis (group 3). H 3–6ft (1–2m), S 1½–5ft (45cm–1.5m). In summer, bears flattish, single, deep blue flowers, 2½–3in (6–8cm) across, with 4 petals and yellow anthers. Leaves are elliptic. Z4–11

***C.* 'Early Sensation'** (Forsteri Group; illus. p.198). Evergreen, early small-flowered clematis (group 1). H 6ft (2m), S 3ft (1m). Dark green leaves are bronzed when young. From early to midspring, bears scented, bell- to cup-shaped, white flowers, with yellow anthers often tinged purple. Z9–11

***C.* 'Elizabeth'**, syn. *C. montana* 'Elizabeth'. Vigorous Montana clematis (group 1). H 30–40ft (10–12m), S 6–10ft (2–3m). In late spring, bears scented, soft pink flowers with widely spaced petals. Z6–9

***C.* 'Elsa Späth'.** Early large-flowered clematis (group 2). H 6–10ft (2–3m), S 3ft (1m). Bears abundant single flowers, 5in (12cm) across, with overlapping, rich mauve-blue petals and red anthers, throughout summer. Z6–9

***C.* 'Ernest Markham'** (illus. p.200). Vigorous, late large-flowered clematis (group 3). H 10–12ft (3–4m), S 3ft (1m). In summer, bears single flowers, 4in (10cm) across, with blunt-tipped, vivid magenta petals and chocolate anthers. Thrives in full sun. Z4–9

***C.* 'Étoile Violette'**, syn. *C. viticella* 'Étoile Violette' (illus. p.200). Vigorous, late small-flowered clematis (group 3). H 10–15ft (3–5m), S 5ft (1.5m). Bears a profusion of flattish, single, violet-purple flowers, ½–2½in (4–6cm) across, with yellow anthers, in summer. Z4–9

***C.* 'Fireworks'** (illus. p.199). Early large-flowered clematis (group 2). H 13ft (4m), S 3ft (1m). In late spring and early summer, bears single, blue-mauve flowers, with wine-red and white stamens and a central, bright cerise-purple stripe on each sepal. Late summer flowers are slightly smaller. Z4–9

C. flammula (illus. p.200). Vigorous, late small-flowered clematis; may be semi-evergreen (group 3). H 10–15ft (3–5m), S 6ft (2m). Produces a profusion of almond-scented, flattish, single, white flowers, ¾in (2cm) across, in summer and early fall. Z5–9

***C. florida* 'Bicolor'.** See *C.f.* 'Sieboldiana'. **Pistachio ('Evirida')** (illus. p.199). Vigorous, long-flowering, late large-flowered clematis (group 3). H 10ft (3m), S 3ft (1m). From early summer to late fall, produces an abundance of creamy-white, rounded flowers 2½–3½in (6–9cm) across, each with a central cluster of pinkish-gray anthers and green styles.

'Sieboldii' see *C.f.* 'Sieboldiana'.

'Sieboldiana' (syn. *C.f.* 'Bicolor', *C.f.* 'Sieboldii'; illus. p.199). late large-flowered clematis (group 3). H 6–10ft (2–3m), S 3ft (1m). In summer, bears passion-flowerlike, single blooms, each 3in (8cm) across, with creamy-white petals and a domed boss of petallike, rich purple stamens. Needs a sheltered aspect. Z6–10

***C.* 'Frances Rivis'** (Atragene Group), syn. *C. alpina* 'Frances Rivis' (illus. p.200). Early small-flowered clematis (group 1). H 6–12ft (2–4m), S 3ft (1m). In early and mid-spring, produces an abundance of deep blue, nodding, bell-shaped flowers, 2–3in (5–8cm) across, with white staminodes. Z4–9

***C.* 'Frankie'** (Atragene Group), syn. *C. alpina* 'Frankie' (illus. p.200). Early small-flowered clematis (group 1). H 7–12ft (2.2–4m), S 3ft (1m). In early and mid-spring, produces nodding, bell-shaped, mid-blue to deep mauve-blue flowers, to 1–2½in (2.5–6cm) across, with creamy-white, blue-tipped staminodes. Z4–11

***C.* Franziska Maria ('Evipo008').** Compact, very long-flowering, early large-flowered clematis (group 2). Produces fully double, deep blue-purple flowers, 4–6in (10–15cm) across, with yellow anthers, from early summer to early fall. Z4–11

***C.* Galore ('Evipo032')**, syn. *C.* Vesuvius. Vigorous, late small-flowered clematis (group 3). H 10ft (3m), S 3ft (1m). From midsummer to fall, bears numerous, deep purple flowers to 3in (7cm) across, with contrasting yellow anthers. Z4–11

***C.* Gazelle ('Evipo014').** Low growing, scandent, non-clinging clematis (group 3). H 3ft (1m), S 2ft (60cm). Produces numerous nodding, slightly scented, white flowers, to 2½in (6cm) across, with twisted sepals and yellow stamens, from midsummer to early fall. Z4–11

***C.* 'Generał Sikorski'.** Early large-flowered clematis (group 2). H 10ft (3m), S 3ft (1m). In summer, bears numerous single flowers, 4in (10cm) across, with large, overlapping, blue petals and cream anthers. Z6–10

***C.* 'Gipsy Queen'.** Vigorous, late large-flowered clematis (group 3). H 10ft (3m), S 3ft (1m). In summer, produces single flowers, 4in (10cm) across, with velvety, violet-purple petals and red anthers. Z4–9

***C.* 'Gravetye Beauty'** (illus. p.200). Vigorous, late small-flowered clematis (group 3). H 8ft (2.5m), S 3ft (1m). In summer and early fall, bears a profusion of small, tuliplike, single, bright red flowers, 2½in (6cm) long, with brown anthers. Similar to *C.* 'Duchess of Albany', but flowers are more open. Z6–10

***C.* 'Guernsey Cream'** (illus. p.198). Early large-flowered clematis (group 2). H 8ft (2.5m), S 3ft (1m). Bears single flowers, 5in (12cm) across, with creamy-yellow petals and anthers, in early summer. Flowers are smaller and creamy white in late summer. Fades in full sun. Z4–9

***C.* 'Hagley Hybrid'.** Vigorous, late large-flowered clematis (group 3). H 8ft (2.5m), S 3ft (1m). In summer, produces single flowers, 3–4in (8–10cm) across, with boat-shaped, rose-mauve petals and red anthers. Prefers partial shade. Z4–9

***C.* Happy Birthday ('Zohapbi')** (illus. p.199). Late large-flowered clematis (group 3). H 8–10ft (2.5–3m), S 5ft (1.5m). From mid- to late summer, bears flattish flowers, 2½–4in (6–10cm) across, opening dark purple before maturing to cobalt-blue, with broad white filaments. Z5–9

***C.* Harlow Carr ('Evipo004').** Scandent, herbaceous clematis (group 3). H 6–10ft (2–3m), S 3ft (1m). From early to late summer, produces semipendent, dark violet-blue, open flowers, to 3in (7cm) across, each with 4 twisted petals, dark brown anthers and white filaments. Z4–9

***C.* 'Henryi'** (illus. p.199). Vigorous, early large-flowered clematis (group 2). H 10ft (3m), S 3ft (1m). In summer, bears single flowers, 5in (12cm) across, with white petals and dark chocolate anthers. Z4–9

***C. heracleifolia* 'Cassandra'.** Herbaceous, compact, bushy subshrub (Group 3). H and S 2½ft (75cm). Has slightly downy stems and large, toothed, lobed, mid-green leaves. From summer to fall, stems bear short clusters of scented, tubular, single, deep blue flowers, 1¼–1½in (3–4cm) long, with reflexed petal tips and slightly ruffled edges. Z6–10

***C. heracleifolia* var. *davidiana*.** See *C. tubulosa*.

***C.* 'H.F. Young'.** Compact, early large-flowered clematis (group 2). H 8ft (2.5m), S 3ft (1m). Bears single flowers, 4in (10cm) across, with violet-tinged, blue petals and cream anthers, in summer. Ideal for a container or patio garden. Z4–11

***C.* 'Huldine'** (illus. p.199). Very vigorous, late large-flowered clematis (group 3). H 10–12ft (3–4m), S 6ft (2m). In summer, bears single, white flowers, 2½in (6cm) across, mauve beneath and with cream anthers. Ideal for an archway or pergola. Z4–11

***C.* 'Huvi'.** Late large-flowered clematis (group 3). H 8ft (2.5m), S 6ft (2m). From late summer to early fall, produces single, flattish or saucer-shaped flowers, 5–7in

(12–19cm) across, with satiny, deep carmine-red or purplish-red sepals, and pinkish-white filaments bearing purplish anthers. Z5–9

***C.* Hyde Hall ('Evipo009').** Vigorous, early large-flowered clematis (group 2). H 6–8ft (2–2.5m), S 3ft (1m). Flowers prolifically from early to midsummer, producing large, creamy-white blooms, 5–7in (12–18cm) across, sometimes tinged pink or green, with chocolate-brown anthers. Z5–9

***C.* Ice Blue ('Evipo003').** Early large-flowered clematis (group 2). H 6–8ft (2–2.5m), S 3ft (1m). In late spring and early summer, produces an abundance of very large, ice-blue flowers, 6–8in (15–20cm) across, repeat-flowering during late summer and early fall. Z5–9

***C. integrifolia*.** Herbaceous clematis (group 3). H and S 30in (75cm). Leaves are narrowly lance-shaped. In summer, bears bell-shaped, single, deep blue flowers, 1¼in (3cm) long, with cream anthers, followed by attractive, gray-brown seed heads. Z5–9

***C.* 'Jackmanii'** (illus. p.200). Vigorous, late large-flowered clematis (group 3). H 10ft (3m), S 3ft (1m). Bears abundant velvety, single, dark purple flowers, fading to violet, 3–4in (8–10cm) across, with light brown anthers, in midsummer. Z5–9

***C.* 'Jackmanii Superba'.** Vigorous, late large-flowered clematis (group 3). Similar to *C.* 'Jackmanii', but has more rounded, darker flowers. Z5–9

***C.* 'Jacqueline du Pré'** (Atragene Group; illus. p.199). Early small-flowered clematis (group 1). H 8–13ft (2.5–4m), S 5ft (1.5m). Bears bell-shaped, nodding, rosy-mauve flowers, with silvery-pink sepal margins and pink-flushed, white staminodes, in spring. Z5–9

***C.* 'Jan Lindmark'** (Atragene Group; illus. p.199). Early small-flowered clematis (group 1). H to 13ft (4m), S 3ft (1m). In spring, produces bell-shaped, pendent, purple-mauve flowers, with purple, outer stamens and shorter, white, inner staminodes. Z5–9

***C.* 'John Huxtable'.** Late large-flowered clematis (group 3). H 6–10ft (2–3m), S 3ft (1m). Bears a profusion of single, white flowers, 3in (8cm) across, with cream anthers, in midsummer. Z5–9

***C.* 'Josephine' (Evijohill).** Early large-flowered clematis (group 2). H 8ft (2.5m), S 3ft (1m). From early summer to early fall, bears double flowers, 5in (12cm) across, with almost bronze, green-tinged petals with a darker central bar; the petals become lilac in midsummer, with a pink bar. Best color in sun. Z5–9

***C.* x *jouiniana*.** Scandent, subshrubby, late-flowering clematis (group 3). H 3ft (1m), S 10ft (3m). Has coarse foliage and, in summer, an abundance of tubular, single, soft lavender or off-white flowers, ¾in (2cm) across, with reflexed petal tips. Non-clinging. Z5–9. **'Praecox** see *C.* 'Praecox'.

***C.* 'Kaiu'** (illus. p.198). Late small-flowered clematis (group 3). H 5–10ft (1.5–3m), S 5ft (1.5m). In late summer, produces solitary, single, nodding, tubular flowers, ¾–1¼in (2–3cm) across, with sepals tinged light purple or pink when young, aging to white, their tips recurving with age. Z5–9

***C.* 'Kakio'**, syn. *C.* Pink Champagne (illus. p.199). Early large-flowered clematis (group 2). H 10ft (3m), S 3ft (1m). In late spring and early summer, produces single, vivid purple-red to deep pink flowers, with central, white stripes on each sepal. Z5–9

***C.* 'Kardynał Wyszyński** (illus. p.200). Early large-flowered clematis (group 2). H 10ft (3m), S 3ft (1m). Produces single, bright crimson flowers, with pale violet filaments and dark brown anthers, from early to late summer. Z5–9

***C. koreana* var. *carunculosa* 'Lemon Bells'**, syn. *C. chiisanensis* 'Lemon Bells'. Early small-flowered clematis (group 1). H 6–10ft (2–3m), S 5ft (1.5m). In late spring and summer, sometimes again in fall, wine-red pedicels bear pendent, semi-double, bell-shaped, thick, spongy, usually pale yellow flowers, 2–2½in (5–6cm) across, often suffused wine-red toward the bases, with short staminodes, pointed sepals, and prominently ridged veins. Z5–9

***C.* 'Lasurstern'.** Vigorous, early large-flowered clematis (group 2). H 6–10ft (2–3m), S 3ft (1m). In summer, bears single, blue flowers, 4–5in (10–12cm) across, with overlapping, wavy-edged petals and cream anthers. Z5–9

***C.* 'Lincoln Star'** (illus. p.199). Early large-flowered clematis (group 2). H 6–10ft (2–3m), S 3ft (1m). Bears single, raspberry-pink flowers, 4–5in (10–12cm) across, with red anthers, in early summer. Early flowers are darker than late ones, which have very pale pink petal edges. Prefers partial shade. Z5–9

***C. macropetala*.** Macropetala clematis (group 1). H 10ft (3m), S 5ft (1.5m). During late spring and summer, bears a profusion of semidouble, mauve-blue flowers, 2in (5cm) long, lightening in color toward the center, followed by fluffy, silvery seed heads. Z5–9. **'Markham's Pink'** (syn. *C.* 'Markham's Pink') has pink flowers.

***C.* 'Madame Edouard André'.** Late large-flowered clematis (group 3). H 8ft (2.5m), S 3ft (1m). Freely produces single, deep red flowers, 3–4in (8–10cm) across, with silver undersides, pointed petals, and yellow anthers, in midsummer. Z5–9

***C.* 'Madame Julia Correvon'**, syn. *C. viticella* 'Madame Julia Correvon' (illus. p.200). Late small-flowered clematis (group 3). H 8–11ft (2.5–3.5m), S 3ft (1m). Produces flattish, single, wine-red flowers, 2–3in (5–7cm) across, with twisted petals, in summer. Z5–9

***C.* 'Madame Le Coultre'.** See *C.* 'Mevrouw Le Coultre'.

***C.* 'Mevrouw Le Coultre'**, syn. *C.* 'Madame Le Coultre'. Vigorous, early large-flowered clematis (group 2). H 10ft (3m), S 3ft (1m). In summer, bears single flowers, 5in (12cm) across, with overlapping, white petals and cream anthers. Z5–9

***C.* 'Markham's Pink'.** See *C. macropetala* 'Markham's Pink'.

***C.* 'Miss Bateman'.** Compact, early large-flowered clematis (group 2). H 8ft (2.5m), S 3ft (1m). An abundance of single, white flowers, 3–4in (8–10cm) across, with red anthers, are produced in summer. Good for a container or patio garden. Z5–9

C. montana (illus. p.198). Vigorous, Montana clematis (group 1). H 22–40ft (7–12m), S 6–10ft (2–3m). In late spring, produces a profusion of single, white flowers, 1½–2in (4–5cm) across, with yellow anthers. Z5–9. **'Broughton Star'** see *C.* 'Broughton Star'. **'Elizabeth'** see *C.* 'Elizabeth'. **var. *rubens*** (illus. p.199). **var. *rubens* 'Tetrarose'** (illus. p.199).

***C.* 'Mrs. Cholmondeley'.** Early large-flowered clematis (group 2). H 6–10ft (2–3m), S 3ft (1m). In summer, bears single, light bluish-lavender flowers, 4–5in (10–12cm) across, with widely spaced petals and light chocolate anthers. Z5–9

***C.* 'Mrs. George Jackman'.** Early large-flowered clematis (group 2). H 6–10ft (2–3m), S 3ft (1m). Bears semidouble flowers, 4in (10cm) across, with creamy-white petals and light brown anthers, in early summer. Z5–9

***C.* 'Mrs. N. Thompson'.** Compact, early large-flowered clematis (group 2). H 8ft (2.5m), S 3ft (1m). Produces an abundance of single, magenta flowers, 3–4in (8–10cm) across, with a central, slightly darker stripe on each bluish-purple-edged petal and red anthers, in summer. Good for a container or patio garden. Z5–9

***C.* 'Nelly Moser'** (illus. p.199). Early large-flowered clematis (group 2). H 11ft (3.5m), S 3ft (1m). In early summer, produces single, rose-mauve flowers, 5–6½in (12–16cm) across, with reddish-purple anthers and, on each petal, a carmine stripe that fades in strong sun. Prefers a shaded, east-, west- or north-facing situation. Z5–9

***C.* 'Niobe'.** Early large-flowered clematis (group 2). H 6–10ft (2–3m), S 3ft (1m). Throughout summer, bears a profusion of single, rich deep red flowers, 4–5½in (10–14cm) across, with yellow anthers. Z5–9

***C. orientalis*.** Late-flowering clematis (group 3). H 10–12ft (3–4m), S 5ft (1.5m). Leaves are gray- to dark green. In summer, bears lantern-shaped, single, greenish-yellow flowers, 1¼in (3cm) across, with recurved petal tips, followed by feathery seed heads. Z5–9

***C.* Peppermint ('Evipo005').** Vigorous, late-flowering clematis (group 3). H 6–10ft (2–3m), S 3ft (1m). From early summer to late fall, bears numerous creamy-white, rosetted flowers, 3–4in (7–10cm) across, with 6 large, outer sepals, which drop as the tight, inner rosette of smaller sepals expand. Late season's flowers are greenish-white. Z5–9

***C.* 'Perle d'Azur'** (illus. p.200). Late large-flowered clematis (group 3). H 10ft (3m), S 3ft (1m). Single, azure-blue flowers, 3in (8cm) across, with recurved petal tips and creamy-green anthers, open in summer. Z5–9

***C.* Petit Faucon ('Evisix').** Vigorous, scandent, non-clinging, late small-flowered clematis (group 3). H 3–5ft (1–1.5m), S 2ft (60cm). From summer to early fall, produces broadly bell-shaped, nodding to semipendent, deep blue-violet flowers, 2–3in (5–8cm) across, with violet filaments and orange-yellow anthers. Z5–9

***C.* Pink Champagne.** See *C.* 'Kakio'.

***C.* 'Pink Dream'.** Prolific, early small-flowered clematis (group 1). H 6–10ft (2–3m), S 5ft (1.5m). In early summer, and again in late summer, purple pedicels bear nodding, semidouble, open bell-shaped, grapefruit-scented, pale pink to cream flowers, 3–4in (8–10cm) across. Z5–9

***C.* 'Polish Spirit'** (illus. p.200). Strong-growing, late large-flowered clematis (group 3). H to 13ft (4m), S 3ft (1m). Single, velvety, deep purple-blue flowers, to 3½in (9cm) across, with dark purple-red and greenish-white stamens, are produced from summer to early fall. Z5–9

***C.* 'Poulala'.** See *C.* Alabast ('Poulala').

***C.* 'Poulvo'.** See *C.* Vino ('Poulvo').

***C.* 'Praecox'**, syn. *C.* x *jouiniana* 'Praecox'. Scandent, non-clinging, woody-based, late small-flowered clematis (group 3). H 3ft (1m), S 10ft (3m). Produces coarse foliage and, from midsummer, clusters of tubular, single, soft lavender or off-white flowers, ¾in (2cm) across, becoming flattish with reflexed sepal tips. Z5–9

***C.* Princess Kate ('Zoprika').** Vigorous, late small-flowered clematis (group 3). H 10–13ft (3–4m), S 3ft (1m). From midsummer to early fall, produces single, upward-facing, fleshy flowers, 1½–2½in (4–6cm) across, tulip-shaped maturing to bell-shaped, with slightly recurved tips; the sepals are predominantly red-purple outside, and white inside, with dark red-purple anthers. Z6–10

***C.* 'Purpurea Plena Elegans'**, syn. *C. viticella* 'Purpurea Plena Elegans' (illus. p.200). H 6–10ft (2–3m), S 3ft (1m). Late small-flowered clematis (group 3). Bears abundant, double flowers, with many purplish-mauve sepals, occasionally green outer sepals, and no anthers, from midsummer to late fall. Z5–9

***C.* 'Ramona'.** Early large-flowered clematis (group 2). H 10ft (3m), S 3ft (1m). Has coarse, dark green leaves offset, in summer, by single, pale blue flowers, 4–5in (10–12cm) across, with red anthers. Prefers a south- or south-west-facing position. Z5–9

***C. recta*.** Clump-forming, herbaceous clematis (group 3). H 3–6ft (1–2m), S 20in (50cm). Leaves are dark or gray-green. Bears a profusion of sweetly scented, flattish, single, white flowers, ¾in (2cm) across, in midsummer. Z5–9

C. rehderiana (illus. p.200). Vigorous, late small-flowered clematis (group 3). H 20–22ft (6–7m), S 6–10ft (2–3m). Bears loose clusters of fragrant, tubular, single, yellow flowers, ½–¾in (1–2cm) long, in late summer and early fall. Leaves are coarse-textured. Z5–9

***C.* 'Rhapsody'.** Compact, early large-flowered clematis (group 2). H 8ft (2.5m), S 3ft (1m). From early summer to early fall, bears single, sapphire-blue flowers, 4–5in (10–13cm) across, with splayed, creamy-yellow anthers. Color deepens with age. Z5–9

***C.* 'Richard Pennell'.** Early large-flowered clematis (group 2). H 6–10ft (2–3m), S 3ft (1m). Produces single flowers, 4–5in (10–12cm) across, with rich purple-blue petals and golden-yellow anthers, in summer. Z5–9

***C.* 'Rōguchi'.** Semierect, late-flowering, herbaceous clematis (group 3). H 5–6ft (1.5–2m), S 3ft (1m). In summer and early fall, bears nodding, narrowly bell-shaped flowers, 1½–3in (4–8cm) across, with yellow anthers. Each white-margined, velvety, purple to light bluish-violet sepal has prominent ribs and is recurved at the tips. Z5–9

***C.* Rosemoor ('Evipo002')** (illus. p.200). Vigorous, early large-flowered, long-flowering clematis (group 2). H 6–8ft (2–2.5m), S 3ft (1m). From early summer

to fall, deep red flowers, 5–6in (12–15cm) across, with contrasting yellow anthers, are produced in abundance. Z5–9
***C.* 'Rosy O'Grady'** (Atragene Group; illus. p.200). Early small-flowered clematis (group 1). H 10–13ft (3–4m), S 3ft (1m). Open, bell-shaped, deep pink to mauve-pink flowers, 2½–5in (6–12cm) across, with creamy-white staminodes, are produced from late spring to early summer and again in fall. Z5–9
***C.* 'Rouge Cardinal'.** Early large-flowered clematis (group 3). H 6–10ft (2–3m), S 3ft (1m). In summer, bears single, velvety, crimson flowers, 3–4in (8–10cm) across, with red anthers. Z5–9
***C.* Royal Velvet ('Evifour').** Early large-flowered clematis (group 2). H 6–8ft (2–2.5m), S 3ft (1m). In early and mid-summer, bears single flowers, 4–6in (10–15cm) across, with bluish, rich velvet-purple petals, with darker central bands, and red anthers. Z5–9
***C.* 'Silver Moon'** (illus. p.200). Early large-flowered clematis (group 2). H to 13ft (4m), S 3ft (1m). Produces single, silvery-mauve flowers from late spring to early fall. Z5–9
***C.* 'Souvenir du Capitaine Thuilleaux'.** Compact, early large-flowered clematis (group 2). H 8ft (2.5m), S 3ft (1m). In early summer, bears single flowers, 3–4in (8–10cm) across, with red anthers and deep pink-striped, cream-pink petals. Ideal for a container or patio garden. Z5–9
***C.* 'Star of India'.** Vigorous, late large-flowered clematis (group 3). H 10ft (3m), S 3ft (1m). Bears a profusion of single, deep purple-blue flowers, 3–4in (8–10cm) across, with light brown anthers, in mid-summer; petals have a deep carmine-red stripe. Z5–9
***C.* Sugar Candy ('Evione').** Vigorous, early large-flowered clematis (group 2). H 10ft (3m), S 3ft (1m). Bears an abundance of pinkish-mauve to light purple flowers, 4–6in (10–18cm) across, with darker, central bars on the sepals and yellow anthers. Z5–9
***C.* 'Sunrise'** (illus. p.199). Vigorous Montana clematis (group 1). H and S 25–30ft (8–10m). Leaves are reddish-purple when young. Slightly scented, semidouble or double, deep pink, single flowers are borne in spring. Z5–9
***C. tangutica*.** Vigorous, late-flowering clematis (group 3). H 15–20ft (5–6m), S 6–10ft (2–3m). Has lantern-shaped, single, yellow flowers, 1½in (4cm) long, throughout summer and early fall; these are followed by fluffy, silvery seed heads. Z5–9
***C.* The Countess of Wessex ('Evipo073')** (illus. p.198). Early large-flowered clematis (group 2). H 3–5ft (1–1.5m), S 3ft (1m). From early to midsummer, and again from late summer to early fall, bears flattish, frilled, white t o pale pink flowers, 5½–7in (14–17cm) across, flushed pink-purple at the base of each central bar, with deep red anthers. Z5–9
***C.* 'The President'.** Early large-flowered clematis (group 2). H 6–10ft (2–3m), S 3ft (1m). In early summer, bears a profusion of single, rich purple flowers, silver beneath, 4in (10cm) across, with red anthers. Z5–9
***C.* 'Tie Dye'.** Late large-flowered clematis (group 3). H 10–13ft (3–4m), S 5ft (1.5m). In summer, bears single, violet-purple to violet-blue flowers, 4–6in (10–15cm) across, marbled with white throughout, but especially along each central bar. A sport from *C.* 'Jackmanii'. Z5–9
C. tubulosa, syn. *C. heracleifolia* var. *davidiana*. Herbaceous clematis (group 3). H 3ft (1m), S 2½ft (75cm). In summer, thick stems bear axillary clusters of scented, tubular, single, pale blue flowers, ¾–1¼in (2–3cm) long, with reflexed petal tips. Z5–9. **'Wyevale'** has strongly scented, dark blue flowers.
***C. urophylla* 'Winter Beauty'**, syn. *C. clarkeana* of gardens, *C.* 'Winter Beauty'. Early small-flowered, evergreen clematis (group 1). H 10–15ft (3–5m), S 5ft (1.5m). Has ternate, glossy, dark green leaves with elliptic leaflets. In midwinter, produces single, softly hairy, cream to white flowers, 1½in (4cm) across, opening tulip-shaped but maturing to open bell-shaped with splayed tips. Z8–11
***C.* Vesuvius.** See *C.* Galore ('Evipo032').
***C.* Victor Hugo ('Evipo007').** Vigorous, scandent, non-clinging, late large-flowered clematis (group 3). H 8–10ft (2.5–3m), S 3ft (1m). Produces an abundance of red-violet flowers, 3in (8cm) across, with dark, violet-tipped stamens, from early summer until fall. Z5–9
***C.* Viennetta ('Evipo006')** illus. p.199. Vigorous, late medium-flowered clematis (group 3). H 6–10ft (2–3m), S 3ft (1m). Between early summer and fall, bears unusual, passion-flowerlike, rounded blooms with 6 creamy-white, regularly placed sepals, surrounding a ring of purple, modified stamens and a dark center. In fall, the outer sepals develop a greenish hue. Z7–9
***C.* 'Ville de Lyon'.** Late large-flowered clematis (group 3). H 6–10ft (2–3m), S 3ft (1m). In midsummer, bears single, bright carmine-red flowers, 3–4in (8–10cm) across, with darker petal edges and yellow anthers. Lower foliage tends to become scorched by late summer. Z5–9
***C.* Vino ('Poulvo')** (illus. p.200). Vigorous, early large-flowered clematis (group 2). H 10ft (3m), S 3ft (1m). Produces numerous, deep petunia-red flowers, 4–7in (10–18cm) across, with contrasting, white to cream filaments and yellow anthers, in late spring and again in late summer and early fall. Z5–9
***C. viticella*.** Late-flowering clematis (group 3). H 6–10ft (2–3m), S 3ft (1m). Bears nodding, open bell-shaped, single, purple-mauve flowers, 1½in (3.5cm) long, in summer. Z5–9. **'Abundance'** see *C.* 'Abundance'. **'Étoile Violette'** see *C.* 'Etoile Violette'. **'Madame Julia Correvon'** see *C.* 'Madame Julia Correvon'. **'Purpurea Plena Elegans'** see *C.* 'Purpurea Plena Elegans'.
***C.* 'Vyvyan Pennell'.** Early large-flowered clematis (group 2). H 6–10ft (2–3m), S 3ft (1m). Bears double, lilac flowers, 4–5in (10–12cm) across, with a central, lavender-blue rosette of petals and golden-yellow anthers, in early summer, then single, blue-mauve flowers. Z5–9
***C.* 'W.E. Gladstone'.** Vigorous, early large-flowered clematis (group 2). H 10–12ft (3–4m), S 3ft (1m). Produces single, lavender flowers, 6in (15cm) across, with red anthers, in summer. Z5–9
***C.* 'Westerplatte'** (illus. p.200). Early large-flowered clematis (group 2). H 8ft (2.5m), S 3ft (1m). From late spring to early summer and again from late summer to early fall, produces single, dark velvet-red flowers, with white filaments and deep red anthers. Z5–9
***C.* 'White Columbine'** (Atragene Group; illus. p.198). Early small-flowered clematis (group 1). H and S 6–10ft (2–3m). In spring, purple-tinted buds open to bell-shaped, nodding, single, creamy-white flowers, maturing to pure white, with petallike, greenish-white staminodes. Z5–9
***C.* 'William Kennett'.** Early large-flowered clematis (group 2). H 6–10ft (2–3m), S 3ft (1m). In summer, produces a profusion of single flowers, 4–5in (10–12cm) across, with red anthers and tough, lavender-blue petals, each bearing a central, darker stripe that fades as the flower matures. Z5–9
***C.* 'Winter Beauty'.** See *C. urophylla* 'Winter Beauty'.
***C.* Wisley ('Evipo001').** Strong-growing, late large-flowered clematis (group 3). H 8–10ft (2.5–3m), S 3ft (1m). From midsummer to early fall, produces numerous, slightly nodding, violet-blue, yellow-anthered flowers, 4–5in (10–12cm) across. Z5–9
***C.* 'Zohapbi'.** See *C.* Happy Birthday ('Zohapbi').
***C.* 'Zoprika'.** See *C.* Princess Kate ('Zoprika').

CLEOME

Spider flower

CLEOMACEAE

Genus of annuals and a few evergreen shrubs, grown for their unusual, spidery flowers. Grow in sun and in fertile, well-drained soil. Remove dead flowers. Propagate by seed sown outdoors in late spring. Aphids may be a problem.
C. hassleriana, syn. *C. spinosa* of gardens. Fast-growing, bushy annual. H to 4ft (1.2m), S 1½ft (45cm). Has hairy, spiny stems and mid-green leaves divided into lance-shaped leaflets. Large, rounded heads of narrow-petaled, pink-flushed, white flowers, with long, protruding stamens, are produced in summer. Z10–11. (min. 39°F/4°C). **'Colour Fountain'** illus. p.304. **'Helen Campbell'**, H to 6ft (1.8m), S 2ft (60cm), has fragrant, pure white flowers. **'Rose Queen'** bears rose-pink flowers. **'Violet Queen'** produces light purple flowers.
C. spinosa of gardens. See *C. hassleriana*

CLERETUM

syn. DOROTHEANTHUS

AIZOACEAE

Genus of succulent annuals, suitable for hot, dry sites such as rock gardens, screes and gaps in paving. Needs sun and grows well in poor, very well-drained soil. Deadhead to prolong flowering. Propagate by seed sown under glass in early spring, or outdoors in midspring. Protect from slugs and snails.
C. bellidiforme, syn. *Dorotheanus bellidiformis, Mesembryanthemum criniflorum* (Ice-plant, Livingstone daisy). Low-growing, carpeting annual. H 4–6in (10–15cm), S 12in (30cm). Has cylindrical, to spoon-shaped, fleshy, light green leaves. Daisylike flowers in white, crimson, rose-red, orange-gold or buff yellow, some zoned in a contrasting color, are freely borne in summer. Z9–11. **'Magic Carpet'** has flowers in bright shades of pink, purple, cream, orange or white.

CLERODENDRUM

LAMIACEAE/VERBENACEAE

Genus of evergreen or deciduous trees, shrubs and climbers, grown for their showy flowers. Needs humus-rich, well-drained soil and full sun, with partial shade in summer. Water freely in growing season, less at other times. Stems require support. Thin out crowded growth in spring. Propagate by seed in spring, by softwood cuttings in late spring or by semiripe cuttings in summer. Whitefly, red spider mite and mealy bug may be a problem.
C. bungei illus. p.141.
C. thomsoniae illus. p.460.
C. trichotomum (illus. p.142). Deciduous, upright, bushy-headed, treelike shrub. H and S 15–20ft (5–6m). Clusters of deep pink and greenish-white buds open to fragrant, white flowers above large leaves from late summer to midfall, followed by decorative, blue berries. Z7–9. **var. *fargesii*** has bronze young leaves, and flowers with green sepals. **var. *fargesii* 'Carnival'** has variegated leaves that are bluish-green and gray with wide, irregular, creamy yellow margins in spring, which turn paler as the leaves mature; protect in winter until well established.

CLETHRA

CLETHRACEAE

Genus of deciduous or evergreen shrubs and trees, grown for their fragrant, white flowers. Needs semishade and moist, peaty, acidic soil. Propagate by softwood cuttings in summer or by seed in fall.
C. alnifolia (Sweet pepper-bush). Deciduous, bushy shrub. H and S 8ft (2.5m). Has , toothed, mid-green leaves and, in late summer and early fall, slender spires of small, bell-shaped flowers. Z3–9.
'Hummingbird', H 1.3ft (1m), is low-growing and rhizomatous with shiny, dark green leaves that turn yellow in fall. Terminal and axillary racemes, to 6in (15cm) long, of scented, white flowers are borne in midsummer. **'Ruby Spice'** has deep pink flowers and shiny, dark green leaves.
C. barbinervis illus. p.129.
C. delavayi illus. p.113.

CLEYERA

PENTAPHYLACACEAE

Genus of evergreen and deciduous shrubs and trees, grown for their foliage and flowers. Needs a sheltered position in sun or semishade and moist, acidic soil. Propagate by semiripe cuttings in summer.
***C. fortunei* 'Variegata'.** See *C. japonica* 'Fortunei'.
***C. japonica*.** Evergreen, bushy shrub. H and S 10ft (3m). Small, fragrant, bowl-shaped, creamy-white flowers are borne in summer amid narrowly oblong to oblong,

glossy, dark green leaves. Occasionally bears small, spherical, red fruits, ripening to black. Z8–11. **'Fortunei'** (syn. *C. fortunei* 'Variegata'), H and S 6ft (2m), produces pink-flushed, young leaves, later green edged with creamy-white. **'Tricolor'** see *C. j.* 'Fortunei'.

CLIANTHUS

PAPILIONACEAE/LEGUMINOSAE

Genus of evergreen, trailing or climbing shrubs or subshrubs, grown for their attractive flowers. Grow outdoors in warm areas in well-drained soil and full sun. In cooler areas, needs to be under glass. In spring, prune out growing tips to give a bushier habit and cut out any dead wood. Propagate by seed in spring or by stem cuttings in late summer.

C. puniceus (Parrot's bill) illus. p.193. **'Albus'** illus. p.192.

CLINTONIA

LILIACEAE/CONVALLARIACEAE

Genus of late spring- or summer-flowering, rhizomatous perennials. Prefers shade and moist but well-drained, peaty, neutral to acidic soil. Propagate by division in spring or by seed in fall.

C. andrewsiana. Clump-forming, rhizomatous perennial. H 2ft (60cm), S 12in (30cm). In early summer, stems bear clusters of small, bell-shaped, pinkish-purple flowers above sparse, broadly , glossy, rich green leaves. Bears globose, blue fruits in fall. Z8–9

C. borealis. Clump-forming, rhizomatous perennial. H and S 12in (30cm). Similar to *C. andrewsiana*, but produces nodding, yellowish-green flowers and small, globose, blackish fruits. Z2–7

C. uniflora (Queencup). Spreading, rhizomatous perennial. H 6in (15cm), S 12in (30cm). Has , glossy, green leaves. Slender stems bear solitary star-shaped, white flowers in late spring, then large, globose, blue-black fruits. Z4–8

CLITORIA

PAPILIONACEAE/LEGUMINOSAE

Genus of mainly evergreen perennials, shrubs and climbers, grown for their large, pealike flowers. Grow in full light and in any fertile, well-drained soil. Water moderately, less when not in full growth. Provide support for stems. Thin out crowded stems in spring. Propagate by seed in spring or by softwood cuttings in summer. Whitefly and red spider mite may be a problem.

C. ternatea. Evergreen, twining climber with slender stems. H 10–15ft (3–5m). Leaves are divided into 3 or 5 elliptic to ovate, rich green leaflets. Clear bright blue flowers, 3–5in (7–12cm) across, with yellow-tinted white centers, are produced singly or in pairs from summer to fall. Z11 (min. 61°F/16°C)

CLIVIA

AMARYLLIDACEAE

Genus of robust, evergreen, rhizomatous perennials, cultivated for their funnel-shaped flowers. Suits borders and large containers. Needs partial shade and well-drained soil. Water well in summer, less in winter. Propagate by seed in winter or spring or by division in spring or summer after flowering. Mealy bugs may cause problems. ⓘ All parts of *C. miniata* may cause mild stomach upset if ingested, and the sap may irritate skin.

C. miniata illus. p.476. **var. *citrina*** is an evergreen, spring- to summer-flowering perennial. H 18in (45cm), S 12in (30cm). Produces basal, strap-shaped, dark green leaves, 2ft (60cm) long, and funnel-shaped, yellow flowers, 2–3in (5–7cm) long. Z11–12 (min. 50°F/10°C)

C. nobilis. Evergreen, spring- or summer-flowering perennial. H 12–16in (30–40cm), S 12–24in (30–60cm). Has strap-shaped, semierect, basal leaves, 16–24in (40–60cm) long. Each leafless stem bears a dense, semipendent head of over 20 narrowly funnel-shaped, red flowers, 1–1½in (2.5–4cm) long, with green tips and yellow margins to petals. Z11–12 (min. 50°F/10°C)

CLUSIA

CLUSIACEAE/HYPERICACEAE

Genus of evergreen shrubs and trees, grown for their foliage and flowers. Needs partial shade and well-drained soil. Water potted specimens moderately, very little when temperatures are low. Pruning is tolerated if necessary. Propagate by layering in spring or by semiripe cuttings in summer. Whitefly and red spider mite may be a problem.

C. major. See *C. rosea*.

C. rosea, syn. *C. major* (Autograph tree, Copey, Fat pork tree, Pitch apple). Slow-growing, evergreen, rounded tree or shrub. H and S to 50ft (15m). Bears lustrous, deep green leaves. Cup-shaped, pink flowers, 2in (5cm) across, are produced in summer, followed by globose, greenish fruits that yield a sticky resin. Z12 (min. 61°F/16°C)

CLYTOSTOMA

BIGNONIACEAE

Genus of evergreen, perennial climbers, grown for their fox-glove like flowers, borne in pairs or clusters from the leaf axils. In frost-free areas, use as groundcover, or to clothe a pergola, sunny wall, or tree. Grow in well-drained soil, with partial shade in summer. Water freely in summer, less at other times. Stems need support. Thin out congested growth after flowering or in spring. Propagate by semiripe cuttings in summer.

C. callistegioides, syn. *Pandorea lindleyana*, illus. p.461.

COBAEA

POLEMONIACEAE

Genus of woody, evergreen and herbaceous climbers. Only one species, *C. scandens*, is generally cultivated. Grow outdoors in warm areas in full light and in any well-drained soil. In cool regions, may be grown under glass or treated as an annual. Propagate by seed in spring.

C. scandens (Cup-and-saucer vine)illus. p.204. **f. *alba*** is an evergreen, woody-stemmed, tendril climber. H 12–15ft (4–5m). Produces long-stalked, bell-shaped, green, then white flowers from late summer until first frosts. Leaves have 4 or 6 oblong to elliptic, rich green leaflets and a large, branched tendril with tiny hooks. Z10-11 (min. 41°F/5°C)

CODIAEUM

EUPHORBIACEAE

Genus of evergreen shrubs, trees and perennials grown for their foliage. Prefers partial shade and fertile, moist but well-drained soil. Remove tips from young plants to promote a branched habit. Propagate by greenwood cuttings from firm stem tips in spring or summer. Mealy bug and soft scale may be a nuisance. ⓘ Contact with the foliage may aggravate skin allergies.

C. variegatum* var. *pictum illus. p.459.

CODONOPSIS

CAMPANULACEAE

Genus of scandent or twining, mostly herbaceous perennials, grown for their bell- or saucer-shaped flowers. Needs a position in semishade, with light, well-drained soil. Train over supports or leave to scramble through other, larger plants. Propagate by seed sown in fall or spring.

C. clematidea. Herbaceous, twining climber. H to 5ft (1.5m). Has small, mid-green leaves. In summer, bears nodding, bell-shaped, white flowers, 1in (25cm) long, tinged blue, and marked inside with darker veining and 2 purple rings. Z5–9

C. convolvulacea. See *Pseudocodon convolvulaceus*.

C. ovata. Upright perennial with scarcely twining stems. H to 12in (30cm). Has mostly basal, small, opposite, ovate, very hairy, mid-green leaves. In summer, bears small, bell-shaped, greenish blue flowers, 1in (25cm) long, checkered darker blue inside. Z5–9

COELOGYNE

ORCHIDACEAE

See also ORCHIDS.

C. cristata illus. p.465.

C. flaccida (illus. p.466). Evergreen, epiphytic orchid for a cool greenhouse. H 6in (15cm). In spring, bears drooping spikes of fragrant, star-shaped, light buff flowers, 1½in (4cm) across, with yellow and brown marks on each lip. Has narrowly ovate, semirigid leaves, 3–4in (8–10cm) long. Grow in semishade in summer. Z11–12 (min. 50°F/10°C, max. 86°F/30°C)

C. nitida, syn. *C. ochracea* (illus. p.466). Evergreen, epiphytic orchid for a cool greenhouse. H 5in (12cm). In spring, produces sprays of very fragrant, white flowers, 1in (25cm) across and with a yellow mark on each lip. Narrowly ovate, semirigid leaves are 3–4in (8–10cm) long. Requires semishade in summer. Z11–12 (min. 50°F/10°C, max. 86°F/30°C)

C. ochracea. See *C. nitida*.

C. speciosa. Vigorous, evergreen, epiphytic orchid for an intermediate greenhouse. H 10in (25cm). In summer, produces pendent, light green flowers, 2½in (6cm) across, with brown- and white-marked lips, that open in succession along stems. Has broadly ovate leaves, 9–10in (23–25cm) long. Needs good light in summer. Z12 (min. 50°F/10°C, max. 86°F/30°C)

COIX

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.

C. lacryma-jobi (Job's tears). Tuft-forming, annual grass. H 18–36in (45–90cm), S 4–6in (10–15cm). Erect stems bear broad leaves, to 2ft (60cm) long. In early fall, bears insignificant spikelets, followed by hard, beadlike, green fruits turning shiny, grayish-mauve. Z7–11

COLCHICUM

COLCHICACEAE/LILIACEAE

Genus of spring- and fall-flowering corms, grown for their mainly goblet-shaped blooms, most of which emerge before the leaves. Each corm bears 2–7 narrowly strap-shaped to broadly elliptic, basal leaves. Needs an open, sunny site and well-drained soil. Propagate by seed or division in fall. ⓘ All parts are highly toxic if ingested and, if in contact with skin, may cause irritation.

C. agrippinum illus. p.425.

C. autumnale illus. p.426. **'Alboplenum'** is an fall-flowering corm. H and S 4–6in (10–15cm). Produces erect, basal, narrowly to broadly lance-shaped, glossy, green leaves and goblet-shaped, double, white flowers with numerous narrow petals, to 2½in (6cm) long. **f. *album*** bears white flowers. Z6–10

***C.* 'Autumn Queen'.** Fall-flowering corm. H 6in (15cm), S 4in (10cm). Produces semierect, broadly lance-shaped leaves. Goblet-shaped, fragrant flowers have white throats and rose-pink petals, (¾–1½in (2–4) long, strongly tessellated with deep purple. Z6–10

***C.* 'Beaconsfield'.** Robust, fall-flowering corm. H and S 6–8in (15–20cm). Bears large, goblet-shaped, rich pinkish-purple flowers, with faintly tesselated petals, 1–1¾in (2.5–4.5cm) long, and white throats. Large, semierect, basal leaves are produced in spring. Z6–10

C. bivonae, syn. *C. bowlesianum, C. sibthorpii*, illus. p.425.

C. bowlesianum. See *C. bivonae*.

C.* x *byzantinum illus. p.426.

C. cilicicum illus. p.425.

C. cupanii. Fall-flowering corm. H 1½in (4cm), S 2in (5cm). Bears widely goblet-shaped, pale to deep purplish-pink flowers, with petals ¾–1in (2–2.5cm) long. Has semierect, linear to linear-lance-shaped, very glossy leaves. Best in a bulb frame. Z6–10

***C.* 'Lilac Wonder'.** Vigorous, fall-flowering corm. H and S 6–8in (15–20cm). Freely bears goblet-shaped, deep lilac-pink flowers with narrow petals, 1½–2½in (4–6cm) long. Semierect, narrowly ovate, basal leaves are produced in spring. Z6–10

C. luteum illus. p.421.

C. macrophyllum. Fall-flowering corm. H 8in (20cm), S 5in (12cm). Bears goblet- to funnel-shaped, lilac- to rosy-purple flowers, often white at the base, with

tessellated petals, 1½–3½in (4–9cm) long, and purple anthers. Has ovate to ovate-elliptic, strongly pleated leaves, which develop after flowering. Z6–10
***C. montanum*.** See *Merendera montana*.
***C.* 'Rosy Dawn'.** Robust, fall-flowering corm. H 6in (15cm), S 4in (10cm). Has semierect, ovate leaves and bears goblet-shaped then open trumpet-shaped, fragrant, pinkish-violet, lightly tessellated flowers with a prominent white center and petals, 2½–3in (6–8cm) long. Z6–10
***C. sibthorpii*.** See *C. bivonae*.
***C. speciosum*.** Vigorous, fall-flowering corm. H and S 6–8in (15–20cm). Bears goblet-shaped, pale to deep pinkish-purple flowers, often with white throats, and petals 1¾–3in (4.5–8cm) long. Large, semierect, basal leaves develop in winter or spring. Z6–10. **'Album'** illus. p.424. **'Atrorubens'** has deep red-purple flowers.
***C.* 'The Giant'.** Robust, fall-flowering corm. H and S 6–8in (15–20cm). Produces somewhat goblet-shaped, purplish-violet flowers, with white bases and lightly tesselated petals, to 3in (8cm) long. Semierect, narrowly ovate, basal leaves form in winter or spring. Z6–10
***C. trigynum*.** See *Merendera trigyna*.
***C. variegatum*.** Fall-flowering corm. H 4–6in (10–15cm), S 3–4in (8–10cm). Bears widely funnel-shaped, short-tubed, violet- to pinkish-purple flowers with strongly tesselated petals, ¾–1in (2–2.5cm) long. More or less horizontal, basal leaves with wavy margins are produced in spring. Needs a hot, sunny site. Z6–10
***C.* 'Violet Queen'.** Fall-flowering corm. H 6in (15cm), S 4in (10cm). Produces semierect, broadly lance-shaped leaves and funnel-shaped, fragrant, pinkish-violet flowers with strongly tesselated, pointed petals, 1½–2½in (4–6cm) long. Z6–10
***C.* 'Waterlily'** illus. p.425.

COLEONEMA

RUTACEAE

Genus of evergreen, heathlike shrubs, grown for their flowers and overall appearance. Requires a position in full sun and well-drained, neutral to acidic soil. Water potted plants moderately when in full growth, sparingly at other times. For a more compact habit, clip after flowering. Propagate by seed sown in spring or by semiripe cuttings in late summer.
C. pulchellum, syn. *C. pulchrum* of gardens. Freely branching evergreen shrub, erect at first, then spreading. H and S 3–4ft (1–1.2m). Bears linear, bright green leaves and numerous pale pink flowers, ¼–⅜in (7–8mm) across, from late spring to summer. Z8–11. **'Golden Sunset'** see 'Sunset Gold'. **'Sunset Gold'** (syn. *C.p.* 'Golden Sunset') has glowing, yellow-green leaves.
C. pulchrum of gardens. See *C. pulchellum*.

***Coleus*.** See *Solenostemon* except for:
C. thyrsoides for which see *Plectranthus thyrsoideus*.

COLLETIA

RHAMNACEAE

Genus of deciduous, usually leafless shrubs, grown for their curious, spiny shoots and profuse, small flowers. Shoots assume function of leaves. Requires a sheltered, sunny site and well-drained soil. Propagate by semiripe cuttings in late summer.
***C. armata*.** See *C. hystrix*.
***C. cruciata*.** See *C. paradoxa*.
C. hystrix, syn. *C. armata*, illus. p.130.
'Rosea' is a deciduous, sturdy-branched shrub. H 8ft (2.5m), S 15ft (5m). Shoots have rigid, gray-green spines. Bears fragrant, tubular, pink flowers in late summer and early fall. Z7–10
C. paradoxa, syn. *C. cruciata*, illus. p.131.

COLOCASIA

ARACEAE

Genus of deciduous or evergreen, perennial, marginal water plants, grown for their foliage. Has edible tubers, known as "taros," for which it is widely cultivated. Suitable for the edges of frost-free ponds; may also be grown in wet soil in pots. Grows in sun or light shade and in mud or shallow water. Propagate by division in spring. ⓘ All parts may cause mild stomach upset if ingested without cooking, and contact with the sap may irritate the skin.
***C. antiquorum*.** See *C. esculenta*.
C. esculenta, syn. *C. antiquorum*.
'Fontanesii' is a deciduous, perennial, marginal water plant. H 3½ft (1.1m), S 2ft (60cm). Has large, bold, , mid-green leaves with dark green veins and margins and blackish-violet leaf stalks and spathe tubes. **'Illustris'** has brownish-purple leaf stalks and dark green leaf blades with purple spots. Z11–12 (min. 50°F/10°C or 70°F/21°C to remain evergreen)

COLQUHOUNIA

LAMIACEAE/LABIATAE

Genus of evergreen or semievergreen shrubs and subshrubs, grown for their flowers in late summer and fall. Cut to ground level in cold winters. Needs a sheltered, sunny site and well-drained soil. Propagate by softwood cuttings in summer.
C. coccinea illus. p.141.

COLUMNEA

GESNERIACEAE

Genus of evergreen shrubs or subshrubs, with trailing or pendent shoots, and occasionally scandent climbers, grown for their showy flowers. Trailing species are useful for hanging baskets. Needs bright but indirect light, a fairly humid atmosphere and moist soil, except in winter. Propagate by tip cuttings after flowering.
C.* x *banksii illus. p.470.
C. crassifolia illus. p.470.
C. gloriosa (Goldfish plant). Evergreen, trailing subshrub with stems branching only at the base. H and S to 3ft (90cm). Ovate or ovate-oblong leaves are densely covered in fine purple hairs; leaf margins are turned under. Bears tubular, hooded, hairy, scarlet flowers, to 3in (8cm) long, with yellow throats, in winter–spring. Z9–11 (min. 59°F/15°C)
***C. microphylla*.** Evergreen, trailing subshrub. H and S 3ft (1m) or more. Has close-set, small, ovate to rounded, dark green leaves with red-brown hairs. Hooded, tubular, hairy, scarlet flowers, to 3in (8cm) long, with yellow throats, are produced in winter–spring. Z12 (min. 59°F/15°C) **'Variegata'** illus. p.475.

COLUTEA

PAPILIONACEAE/LEGUMINOSAE

Genus of deciduous, summer-flowering shrubs, sometimes trees, grown for their foliage, pealike flowers and bladder-shaped seed pods. Grow in full sun and any but waterlogged soil. Propagate by softwood cuttings in summer or by seed in fall. ⓘ Seeds may cause mild stomach upset if ingested.
C. arborescens (Bladder senna) illus. p.139.
C.* x *media illus. p.140.
***C. orientalis*.** Deciduous, bushy shrub. H and S 6ft (2m). Blue-gray leaves consist of 7 or 9 leaflets. Clusters of yellow-marked, coppery-red flowers, produced in summer, are followed by inflated, green, then pale brown seed pods. Z6–10

***Comarum*.** See *Potentilla*.

COMBRETUM

COMBRETACEAE

Genus of evergreen or semievergreen, sometimes briefly deciduous trees and shrubs, some more or less scandent, grown for their small, showy flowers. Provide humus-rich, well-drained soil, with partial shade in summer. Water freely in summer, less at other times. Support for stems is necessary. Thin out and spur back congested growth after flowering. Propagate by semiripe cuttings in summer. Red spider mite may be a problem.
***C. grandiflorum*.** Moderately vigorous, evergreen, scandent to twining climber. H to 20ft (6m). Has oblong to elliptic, pointed leaves, 4–8in (10–20cm) long. Bears one-sided spikes, 4–5in (10–13cm) long, of tubular, bright red flowers with long stamens in summer. Z12 (min. 61°F/16°C)
C. indicum, syn. *Quisqualis indica* (Rangoon creeper), illus. p.462.

COMMELINA

COMMELINACEAE

Genus of perennials, usually grown as annuals.
Grow in a sunny, sheltered site in fertile, well-drained soil. Lift crowns before frosts and overwinter in slightly moist, frost-free conditions. Propagate by seed sown under glass or by division of the crown in spring.
C. coelestis, syn. *C. tuberosa* Coelestis Group (Day flower), illus. p.315.
***C. tuberosa* Coelestis Group.** See *C. coelestis*.

CONANDRON

GESNERIACEAE

Genus of one species of tuberous, evergreen perennial, grown for its fleshy leaves and nodding flower clusters. Grow in an alpine house. Requires a position in shade and humus-rich, well-drained soil. Keep containerized plants moist in summer, dry when dormant in winter. Propagate by division or seed in spring.
***C. ramondoides*.** Hummock-forming, tuberous perennial. H 12in (30cm), S 8in (20cm). Bears broadly , fleshy, wrinkled, mid-green leaves with toothed edges. In midsummer, each flower stem bears 5–25 tubular flowers, usually lilac, but white, purple or pink forms also occur. Z9–11

CONIFERS

Group of trees and shrubs distinguished botanically from others by producing seeds exposed or uncovered on the scales of fruits. Most conifers are evergreen, have needlelike leaves and bear woody fruits (cones). All genera in the Cupressaceae family, however, have needlelike juvenile leaves and, excepting many junipers and some other selected forms, scalelike adult leaves. Conifers described in this book are evergreen unless otherwise stated.

Conifers are excellent garden plants. Most provide year-round foliage, which may be green, blue, gray, bronze, gold or silver. They range in height from trees 130ft (40m) or more tall to dwarf shrubs that grow less than 2in (5cm) every 10 years. Tall conifers may be planted as specimen trees or to provide shelter, screening or hedging. Dwarf conifers are good feature plants in their own right, as well as in groups; they also associate well with heathers, add variety to rock gardens and provide excellent groundcover. They may also be grown in containers.

Hardiness
Nearly all conifers described in this book are hardy. Some, such as *Picea sitchensis*, *P. omorika* and *Pinus contorta*, thrive in the coldest, most windswept sites. *Araucaria*, *Cupressus* and *Pinus* are good for coastal conditions. *Athrotaxis*, *Austrocedrus*, *Cephalotaxus*, *Podocarpus* and certain species noted in other genera flourish only in mild-winter regions. Elsewhere they need a very sheltered position or may be grown indoors as dwarf plants.

Frost may damage new growth of several genera, especially *Abies*, *Larix*, *Picea* and *Pseudotsuga*, and severe cold, dry spells in winter may temporarily harm mature foliage.

Position and soil
Cupressus, x *Cuprocyparis*, *Larix* and *Pinus* need full sun. *Cedrus*, *Juniperus* and *Pseudolarix* prefer a sunny site, but tolerate light shade. All other conifers will thrive in sun or shade, and most *Abies* and all *Cephalotaxus*, *Podocarpus*, *Taxus*, *Thuja*, *Torreya* and *Tsuga* will grow in deep shade once established. *Wollemia* prefers a sheltered location out of full sun.

Conifers grow well on most soils, but certain genera and species will not do well on soils over chalk or limestone. In this book, such conifers are: *Abies*, *Pseudolarix*, *Pseudotsuga* and *Tsuga*; also *Picea*, except *P. likiangesis*, *P. omorika* and *P. pungens*; and *Pinus*, except *P. aristata*, *P. armandii*, *P. cembroides*, *P. halepensis*, *P. heldreichii*, *P. nigra*, *P. peuce* and *P. wallichiana*.

Certain conifers tolerate extreme conditions. *Abies alba*, *A. homolepis*, *A. nordmanniana*, *Cryptomeria*, *Cunninghamia*, *Metasequoia*, *Pinus coulteri*,

P. peuce, *P. ponderosa*, *Sciadopitys*, *Sequoia*, *Sequoiadendron* and *Taxodium* will grow on heavy clay soils. *Picea omorika*, *P. sitchensis*, *Pinus contorta*, *Sciadopitys verticillata* and *Thuja plicata* are all happy on wet soil, and *Metasequoia* and *Taxodium* thrive in waterlogged conditions. *Cupressus*, *Juniperus* and *Pinus* grow well on dry, sandy soil.

Pruning
If a conifer produces more than one leader, remove all but one. Bear in mind when trimming hedges that most conifers will not produce new growth when cut back into old wood or from branches that have turned brown. This does not, however, apply to *Cephalotaxus*, *Cryptomeria*, *Cunninghamia*, *Sequoia*, *Taxus*, *Torreya*, and *Wollemia*; these conifers may be kept to a reasonable size by cutting back the main stem, which will later coppice (produce new growth). Young specimens of *Araucaria*, *Ginkgo*, *Metasequoia* and *Taxodium* will sometimes do the same.

Propagation
Seed is the easiest method of propagation, but forms selected for leaf color (other than blue in some species) do not come true. Sow in fall or spring. All genera apart from *Abies*, *Cedrus*, *Picea* (except young plants or dwarf forms), *Pinus*, *Pseudolarix*, *Pseudotsuga* and *Tsuga* (except young plants or dwarf forms) may be raised fairly easily from cuttings: current growth from fall to spring for evergreens, softwood cuttings in summer for deciduous conifers. Tall-growing forms of Pinaceae (*Abies*, *Cedrus*, *Picea*, *Pinus*, *Pseudolarix*, *Pseudotsuga* and *Tsuga*) are usually propagated by grafting in late summer, winter or early spring. Layering may be possible for some dwarf conifers. It is illegal to propagate *Wollemia nobilis*.

Pests and diseases
Honey fungus attacks many conifers, especially young plants. Most resistant to the disease are *Abies*, *Calocedrus*, *Larix*, *Pseudotsuga* and *Taxus*. Green spruce aphid may be a problem on *Picea*, and conifer spinning mite may defoliate *Abies*, *Picea* and some *Pinus*.

Conifers are illustrated on pp.95–105, dwarf forms on pp.105. See also *Abies*, *Araucaria*, *Athrotaxis*, *Austrocedrus*, *Calocedrus*, *Cedrus*, *Cephalotaxus*, *Chamaecyparis*, *Cryptomeria*, *Cunninghamia*, *Cupressus*, x *Cuprocyparis*, *Fitzroya*, *Ginkgo*, *Juniperus*, *Larix*, *Metasequoia*, *Microbiota*, *Phyllocladus*, *Picea*, *Pinus*, *Podocarpus*, *Pseudolarix*, *Pseudotsuga*, *Saxegothaea*, *Sciadopitys*, *Sequoia*, *Sequoiadendron*, *Taxodium*, *Taxus*, *Thuja*, *Thujopsis*, *Torreya*, *Tsuga*, and *Wollemia*.

CONOPHYTUM
SYN. OPHTHALMOPHYLLUM

AIZOACEAE

Genus of dwarf, often slow-growing, mat- or clump-forming perennial succulents with spherical or 2-eared leaves that grow for only 2 months each year, after flowering. In early summer, old leaves gradually shrivel to papery sheaths from which new leaves and flowers emerge in late summer. Frost tender if dry. Needs full sun and well-drained soil. Keep dry in winter. Propagate by seed from spring to fall or by division in late summer.
C. bilobum illus. p.494.
C. concordans, syn. *Ophthalmophyllum villetii*, illus. p.484.
C. frutescens, syn. *C. notabile*, illus. p.496.
C. longum, syn. *Ophthalmophyllum herri, O. longum*. Clump-forming, perennial succulent. H 1¼in (3cm), S ⅝in (1.5cm). Has 2 almost united, cylindrical, very fleshy, erect, gray-green to brown leaves. Bears daisylike, white to pink flowers, ¾in (2cm) across, in late summer. Z10–11 (min. 41°F/5°C)
C. notabile. See *C. frutescens*.
C. truncatum. Slow-growing, clump-forming, perennial succulent. H ⅝in (1.5cm), S 6in (15cm). Has pea-shaped, dark spotted, blue-green leaves, each with a sunken fissure at the tip. Produces cream flowers, ⅝in (1.5cm) across, in fall. Z10–11 (min. 41°F/5°C)

CONSOLIDA
Larkspur

RANUNCULACEAE

Genus of annuals, providing excellent cut flowers. Needs sun and fertile, well-drained soil. Support stems of tall-growing plants with sticks. Propagate by seed sown outdoors in spring, or in early fall in mild areas. Protect young plants from slugs and snails. ⓘ Seeds are poisonous if ingested.
C. ajacis, syn. *C. ambigua, Delphinium consolida*. Fast-growing, upright, branching annual. Giant forms, H to 4ft (1.2m), S 1ft (30cm); dwarf, H and S 1ft (30cm). All have feathery, mid-green leaves and, throughout summer, spikes of rounded, spurred flowers. Z2–11.
Dwarf Hyacinth Series cultivars have spikes of tubular flowers in shades of pink, mauve, blue or white. **Giant Imperial Series** (Giant larkspur) bear spikes of rounded, spurred, double flowers in pink, blue or white.
C. ambigua. See *C. ajacis*.

CONVALLARIA
Lily-of-the-valley

ASPARAGACEAE

Genus of spring-flowering, rhizomatous perennials. Prefers partial shade and humus-rich, moist soil. Propagate by division after flowering or in fall. ⓘ The seeds of *C. majalis* may cause mild stomach upset if ingested.
C. majalis illus. p.255. **'Flore Pleno'** is a low-growing, rhizomatous perennial. H 9–12in (23–30cm), S indefinite. Sprays of small, very fragrant, pendent, bell-shaped flowers that are double and white open in spring. Ovate to lance-shaped leaves are mid- to dark green. **'Fortin's Giant'** see 'Géant de Fortin'. **'Géant de Fortin'** (syn. *C.m.* 'Fortin's Giant'), H 18in (45cm), has larger flowers and leaves that emerge a little earlier. **var. *rosea***, H 8in (20cm), has pale mauve-pink flowers. Z2–9

CONVOLVULUS

CONVOLVULACEAE

Genus of upright, climbing or scrambling annuals and perennials, and evergreen shrubs or subshrubs. Grow in sun and in poor to fertile, well-drained soil. Deadhead to prolong flowering. Propagate by seed sown outdoors in midspring for hardy plants, or under glass in spring for tender plants, perennials and subshrubs by softwood cuttings in late spring or summer.
C. althaeoides illus. p.362.
C. cneorum illus. p.149.
C. mauritanicus. See *C. sabatius*.
C. minor. See *C. tricolor*.
C. purpureus. See *Ipomoea purpurea*.
C. sabatius, syn. *C. mauritanicus*, illus. p.342.
C. tricolor, syn. *C. minor*. Moderately fast-growing, upright, bushy or climbing annual. H 8–12in (20–30cm), S 8in (20cm). Has ovate to lance-shaped, mid-green leaves. In summer, bears saucer-shaped, blue or white flowers, 1in (25cm) across, with yellowish-white throats. Tall, climbing forms, H to 10ft (3m), have flowers to 4in (10cm) across. Z9–11. **'Blue Flash'** (bushy) illus. p.314. **'Royal Ensign'**, H to 12in (30cm), produces deep blue flowers, to 2in (5cm) across; grow in a hanging basket.

COPIAPOA

CACTACEAE

Genus of slow-growing, perennial cacti with funnel-shaped, yellow flowers. Many species have large tap roots. Needs partial shade and very well-drained soil. Propagate by seed or grafting in spring or summer.
C. cinerea illus. p.489.
C. coquimbana. Clump-forming, spherical, then columnar, perennial cactus. H to 1ft (30cm), S 3ft (1m). Dark gray-green stem has 10–17 ribs. Areoles each bear 8–10 dark brown radial spines and 1 or 2 sturdier central spines. Yellow flowers, 1¼in (3cm) across, are borne in summer. Slow to form clumps. Z10–11 (min. 41°F/5°C)
C. echinoides. Flattened spherical, perennial cactus, ribbed like a sea urchin. H 6in (15cm), S 4in (10cm). Solitary gray-green stem bears dark brown spines, 1¼in (3cm) long, which soon fade to gray. In summer, produces pale yellow flowers, 1½in (4cm) across. Z10–11 (min. 41°F/5°C)
C. marginata. Clump-forming, perennial cactus. H 2ft (60cm), S 1ft (30cm). Gray-green stem bears very close-set areoles with dark-tipped, pale brown spines, to 1¼in (3cm) long. Has yellow flowers, ¾–2in (2–5cm) across, in spring–summer. Z10–11 (min. 41°F/5°C)

COPROSMA

RUBIACEAE

Genus of evergreen shrubs and trees, grown for their foliage and fruits. Separate male and female plants are needed to obtain fruits. Prefers full light and well-drained soil. Water containerized specimens freely in summer, moderately at other times. Propagate by seed in spring or by semiripe cuttings in late summer.
C. baueri of gardens. See *C. repens*.
C. baueriana. See *C. repens*.
***C.* x *kirkii* 'Variegata'** illus. p.152.
C. repens, syn. *C. baueri* of gardens, *C. baueriana*, illus. p.457. **'Picturata'** is an evergreen, spreading, then erect shrub. H and S to 6ft (2m). Has broadly, leathery, lustrous, rich green leaves with a central cream to yellow blotch. In late spring, bears insignificant flowers, followed, on female plants, by egg-shaped, orange fruits from late summer to fall. Z8–11

CORDYLINE

ASPARAGACEAE

Genus of evergreen shrubs or treelike, woody-stemmed perennials, grown primarily for their foliage, although some also have decorative flowers. Provide fertile, well-drained soil and full light or partial shade. Water potted plants moderately, less in winter. Propagate by seed or suckers in spring or by stem cuttings in summer. Red spider mite may be a nuisance.
C. australis, syn. *Dracaena australis* (New Zealand cabbage palm). Slow-growing, evergreen, sparsely branched tree. H 50ft (15m) or more, S 15ft (5m) or more. Each stem is crowned by a rosette of strap-shaped leaves, 1–3ft (30–100cm) long. Bears small, scented, white flowers in large, open panicles in summer and, in fall, globose, white fruits. Z9–11. **'Atropurpurea'** illus. p.451. **'Torbay Dazzler'** has leaves with bold, cream stripes and margins. **'Veitchii'** has long, sword-shaped leaves with a red base and midrib.
C. fruticosa, syn. *C. terminalis* (Good-luck plant, Ti tree). Slow-growing, evergreen, upright shrub, sparingly branched and suckering. H 6–12ft (2–4m), S 3–6ft (1–2m). Broadly lance-shaped, glossy, deep green leaves are 1–2ft (30–60cm) long. Produces branched panicles of small, white, purplish or reddish flowers in summer. Z11–12. (min. 55°F/13°C). **'Baptistii'** has deep green foliage with pink and yellow stripes and spots.
C. indivisa, syn. *Dracaena indivisa*. Slow-growing, evergreen, erect tree or shrub. H 10ft (3m) or more, S 6ft (2m). Bears lance-shaped, green leaves, 2–6ft (0.6–2m) long, orange-brown veined above, blue-gray tinted beneath. In summer, tiny, star-shaped, white flowers in dense clusters, 2ft (60cm) or more long, are followed by tiny, spherical, blue-purple fruits. Z9–11
C. terminalis. See *C. fruticosa*.

COREOPSIS
Tickseed

ASTERACEAE/COMPOSITAE

Genus of annuals and perennials, grown for their daisylike flower heads. Needs full sun and fertile, well-drained soil. Propagate annuals by seed in spring; *C. lanceolata* by seed or division in spring; *C. auriculata* 'Superba', *C. lanceolata* 'Goldfink' and *C. grandiflora* 'Badengold' by softwood cuttings or division in spring or summer; and *C. verticillata* by division in spring.
***C. auriculata* 'Superba'.** Bushy perennial. H and S 18in (45cm). Daisylike, rich yellow flower heads, with central, purple blotches, are borne in summer. Ovate to lance-shaped leaves are lobed and light green. Some plants grown as *C. auriculata* are the closely related annual *C. basalis*. Z4–8
***C.* 'Goldfink'.** See *C. lanceolata* 'Goldfink'.

***C. grandiflora* 'Badengold'.** Short-lived, erect perennial with lax stems. H 30in (75cm), S 2ft (60cm). Has broadly lance-shaped, divided, bright green leaves and bears large, daisylike, rich buttercup-yellow flower heads in summer. Z4–9.
'**Early Sunrise'**, H to 18in (45cm), is usually grown as an annual, and bears semidouble, deep yellow flower heads, flushed orange-yellow near the center.
'Sunray' (syn. *C.* 'Sunray') illus. p.321.
C. lanceolata illus. p.276. **'Goldfink'** (syn. *C.* 'Goldfink') is a short-lived, dwarf, bushy perennial. H and S 12in (30cm). Sprays of daisylike, deep yellow flower heads are produced in summer above narrowly ovate, deep green leaves.
'Sterntaler' see *C.* 'Sterntaler'. Z4–9
***C.* 'Limerock Ruby'** illus. p.268.
***C. rosea* 'American Dream'.** Upright perennial. H 14in (35cm), S 12in (30cm). Has small, lance-shaped, dark green leaves and bears abundant daisylike, yellow-centered, pink flower heads, on self-supporting, branched stems, in midsummer. Z4–9
***C.* 'Rum Punch'** illus. p.326.
***C.*'Sterntaler'.** Upright perennial. H to 16in (40cm), S 12in (30cm). Produces sprays of daisylike, yellow flower heads with brown centers in summer and narrowly ovate, deep green leaves. Z4–9
***C.* 'Sunray'.** See *C. grandiflora* 'Sunray'.
C. tinctoria (Tick-seed) illus. p.321.
'Golden Crown' is a fast-growing, upright, bushy annual. H 2ft (60cm), S 8in (20cm). Has lance-shaped, deep green leaves and, in summer and early fall, bears large, daisylike, deep yellow flower heads with brown centers. Z4–9
C. verticillata illus. p.276.

CORIARIA

CORIARIACEAE

Genus of spring- or summer-flowering small trees or shrubs, usually deciduous, and rhizomatous, herbaceous or subshrubby perennials, grown for their habit, foliage and fruits. Needs full sun and fertile, well-drained soil. Propagate by softwood cuttings in summer or by seed in fall. ⓘ The leaves and fruits of some species may cause severe stomach upset if ingested; in other species, the fruits are edible, although the seeds are thought to be poisonous.
C. terminalis*.** Deciduous, arching subshrub. H 3ft (1m), S 6ft (2m). Broadly lance-shaped, fernlike, mid-green leaves turn red in fall. Minute, green flowers in late spring are succeeded by small, spherical, black fruits. Z7–10. **var. *xanthocarpa illus. p.161.

CORNUS

Dogwood

CORNACEAE

Genus of mainly deciduous shrubs and small trees, and a few woody-based perennials, grown for their flowers, foliage or brightly colored winter stems. Needs sun or semishade and fertile, well-drained soil. Those grown for winter stem color do best in full sun. *C. florida, C. kousa* and *C. nuttallii* dislike shallow, chalky soil. *C. canadensis* prefers acidic soil. Plants grown for their stems should be cut back almost to ground level each year in early spring. Propagate *C. alba* and *C. sericea* 'Flaviramea' by softwood cuttings in summer or by hardwood cuttings in fall or winter; variegated forms of *C. alternifolia* and *C. controversa* by grafting in winter; *C. canadensis* by division in spring or fall; *C. capitata*, *C. florida* and *C. kousa* by seed in fall or by softwood cuttings in summer; *C. nuttallii* by seed in fall; all others described here by softwood cuttings in summer. ⓘ The fruits of some species may cause mild stomach upset if ingested; contact with leaf hairs may irritate skin.
C. alba (Red-barked dogwood). Vigorous, deciduous, upright, then spreading shrub. H and S 10ft (3m). Young shoots are bright red in winter. Has ovate, dark green leaves, often red or orange in fall. Bears flattened heads of star-shaped, creamy-white flowers in late spring and early summer, followed by spherical, sometimes blue-tinted, white fruits. Z3–7.
'Aurea' (illus. p.126) has pale greenish-yellow leaves in summer. **'Elegantissima'** (illus. p.126) has white-edged, gray-green leaves. **'Gouchaultii'** has pink-flushed leaves broadly edged with yellow.
'Kesselringii' (illus. p.126) has dark green leaves flushed reddish-purple in fall.
'Sibirica' illus. p.143.
'Sibirica Variegata' (illus. p.142) has gray-green leaves with creamy-white margins. **'Spaethii'** (illus. p.126) has bright green leaves with yellow edges.
C. alternifolia (illus. p.87). Deciduous, spreading tree or bushy shrub, with tiered branches. H and S 20ft (6m). Ovate, bright green leaves, which each taper to a point, often turn red in fall. Clusters of tiny, star-shaped, creamy-white flowers in early summer are followed by small, rounded, blue-black fruits. Z3–7.
'Argentea' (illus. p.87) has narrowly ovate, white-variegated leaves.
C. canadensis, syn. *Chamaepericlymenum canadense* (Creeping dogwood), illus. p.360.
C. capitata, syn. *Dendrobenthamia capitata* (Bentham's corne; illus. p.87). Evergreen or semievergreen, spreading tree. H and S up to 40ft (12m). Pale yellow bracts, surrounding insignificant flowers, are borne in early summer, followed by large, strawberrylike, red fruits. Has ovate, gray-green leaves. Good for mild coastal areas. Z3–7
C. controversa (illus. p.87). Deciduous tree with layered branches. H and S 50ft (15m). Leaves are ovate, pointed and bright green, turning purple in fall Clusters of small, star-shaped, white flowers are borne in summer. Z3–7. **'Variegata'** (Wedding-cake tree), H and S 25ft (8m), has bright green leaves with broad, creamy-white margins, turning yellow in fall.
***C.* 'Eddie's White Wonder'** (illus. p.87). Deciduous, spreading tree or shrub. H 20ft (6m), S 15ft (5m). Large, white bracts, surrounding insignificant flowers, develop in late spring. Ovate leaves are mid-green, turning red and purple in fall. Z3–7
C. florida (Flowering dogwood). Deciduous, spreading tree. H 20ft (6m), S 25ft (8m). In late spring, bears white or pinkish-white bracts surrounding tiny, insignificant flowers. Ovate, pointed, dark green leaves turn red and purple in fall. Z3–7. **'Cherokee Chief'** (illus. p.87) bears pink-red bracts, fading to white close to each flower. **'Cherokee Daybreak'** see *C.f.* 'Daybreak'. **'Cherokee Princess'** (illus. p.87) has bronze-colored leaves that mature to dark green. **'Daybreak'** (syn. *C.f.* 'Cherokee Daybreak') has gray-green leaves with white margins that turn a striking deep pink to red in fall; bears white flower bracts. **'Rainbow'** (illus. p.87) has a compact, erect habit, white bracts and yellow-edged leaves turning purple-red in fall. **f. *rubra* 'Spring Song'** has pink bracts. **'White Cloud'** has large white bracts.
C. kousa illus. p.85**. var. *chinensis*** (illus. p.87) is a deciduous, upright tree or shrub. H 30ft (10m), S 15ft (5m). Has ovate, glossy, dark green leaves that turn bright red-purple in fall. Produces large, tapered flower bracts, to 2in (5cm) long, which open creamy-white, aging to pure white, and eventually to shades of pink and red, followed by strawberrylike fruits. **var. *chinensis* 'China Girl'** (illus. p.87) is vigorous and free-flowering, even when young. **var. *chinensis* 'Wisley Queen'** bears purplish-red leaves in fall, and produces prodigious quantities of creamy-white bracts, aging to reddish-pink; older trees have attractive, flaking bark. **'John Slocock'** is upright when young; bears prodigious quantities of flowers and fruit. **'Miss Satomi'** (illus. p.87) has deep pink bracts and reliable purplish-red fall color. **'National'** (illus. p.87) is vigorous and vase-shaped, with scarlet to reddish-purple leaves in fall; produces large, creamy-white, overlapping bracts, aging to pink, and larger fruit than average, up to 1½in (3.5cm) across. **'Summer Fun'** has strikingly variegated light green leaves, widely margined with creamy-yellow at first, becoming creamy-white and turning to pink shades in fall; it has small white flower bracts; best grown in partial shade. **'Teutonia'** is upright, with large, white overlapping bracts that turn pink and red, borne in midsummer. **'Wolf Eyes'** has creamy-white-margined, undulating leaves which become pink-tinted in fall. Z5–9
C. mas (Cornelian cherry; illus. p.87). Deciduous, spreading, open shrub or tree. H and S 15ft (5m). Ovate, dark green leaves turn reddish-purple in fall. In late winter and early spring, bears small, star-shaped, yellow flowers on bare shoots, then edible, oblong, bright red fruits. Z5–9. '**Aurea**' has golden-yellow leaves in spring, becoming softer yellow by midsummer, and taking on pink tinges during fall. **'Aureoelegantissima'** (syn. *C.m.* 'Elegantissima'; illus. p.87), H 6ft (2m), S 10ft (3m), has pink-tinged leaves edged with yellow. **'Elegantissima'** see *C.m.* 'Aureoelegantissima'. **'Variegata'** is bushy and dense, with white-edged, dark green leaves.
***C.* 'Norman Hadden'.** Deciduous, spreading tree. H and S 25ft (8m). Creamy-white bracts around tiny flowers turn to deep pink in summer. These are often followed by strawberrylike fruits in fall. Has elliptic-ovate, mid-green leaves, some turning yellow or pink in fall. Z5–9
C. nuttallii (Mountain dogwood, Pacific dogwood). Deciduous, conical tree. H 40ft (12m), S 25ft (8m). Has ovate, dark green leaves and produces large, white bracts, surrounding tiny flowers, in late spring. Z5–7. **'Monarch'** (illus. p.87) is a vigorous, spreading tree with large, rounded, white bracts, surrounding tiny flowers, in midspring, and purple-blushed shoots bearing ovate, mid-green leaves.
***C.* 'Porlock'** (illus. p.87). Deciduous, spreading tree. H 30ft (10m), S 15ft (5m). Creamy-white bracts around tiny flowers turn to deep pink in summer. These are often followed by heavy crops of strawberrylike fruits in fall. Has elliptic to ovate, mid-green leaves. Z5–7
C. sanguinea (Common dogwood; illus. p.142). Deciduous, upright shrub. H to 10ft (3m), S 3ft (1m). Reddish-green, sometimes entirely green, winter shoots are a deep red color when young. Ovate, mid-green leaves turn reddish-purple in fall. Flattened heads of star-shaped, white flowers, in late spring, are followed by ovoid, blue-black fruits. Grows well in damp soil. Z5–7. **'Anny's Winter Orange'** has bright red winter shoots, orange toward the bases; long-lasting leaves turn deep yellow in fall.
'Magic Flame' has winter shoots colored red in the upper half, orange-yellow below; leaves are rounded and turn apricot in fall. **'Midwinter Fire'** (illus. p.126) produces flame-colored stems, yellow at the bases rising to scarlet-red on younger growth.
C. sericea, syn. *C. stolonifera* (Red osier dogwood). **'Flaviramea'** (illus. p.126) is a vigorous, deciduous shrub. H 6ft (2m), S 13ft (4m). Has olive-green to yellow, young shoots in winter and ovate, mid-green leaves. Flattened heads of small, star-shaped cream flowers, in late spring and early summer, are followed by ovoid, creamy-white fruits. **'Hedgerows Gold'** is very vigorous, with leaves irregularly margined with golden yellow, aging to creamy white; in fall, leaves turn a combination of cream, purple and pinkish-maroon. **'White Gold'** (syn. *C.s.* 'White Spot'; illus. p.126) has mid-green leaves margined and mottled with white. **'White Spot'** see *C.s.* 'White Gold'. Z3–7
***C. stolonifera*.** See *C. sericea.*

COROKIA

ARGOPHYLLACEAE/ESCALLONIACEAE

Genus of evergreen shrubs, grown for their habit, foliage, flowers and fruits. Very wind tolerant in mild, coastal areas. Where marginally hardy, protect from strong winds. Needs full sun and fertile, well-drained soil. Propagate by softwood cuttings in summer.
***C. buddlejoides*.** Evergreen, upright shrub. H 10ft (3m), S 6ft (2m). Has slender, gray shoots and narrowly oblong, glossy, dark green leaves. Bears panicles of star-shaped, yellow flowers in late spring, then spherical, blackish-red fruits. Z8–10
C. cotoneaster (Wire-netting bush) illus. p.144.
***C.* x *virgata*.** Evergreen, upright, dense shrub. H and S 10ft (3m). Leaves are oblong and glossy, dark green above, white beneath. Produces star-shaped, yellow flowers in midspring, then egg-shaped, bright orange fruits. Good as a hedge, especially in coastal areas. Z8–10

CORONILLA

PAPILIONACEAE/LEGUMINOSAE

Genus of deciduous or evergreen shrubs, annuals and perennials, grown for their foliage and flowers. Where marginally hardy, grow against a south- or west-facing wall. Requires full sun and light, well-drained soil. Propagate by softwood cuttings in summer.

***C. glauca*.** See *C. valentina* subsp. *glauca*.

C. valentina* subsp. *glauca, syn. *C. glauca*, illus. p.195.

CORREA

RUTACEAE

Genus of evergreen shrubs and small trees, grown for their flowers. Prefers full light or partial shade and fertile, well-drained, neutral to acidic soil. Water containerized specimens moderately, less when not in flower. Propagate by seed in spring or by semiripe cuttings in late summer.

***C. backhouseana*.** Evergreen, rounded, well-branched shrub. H and S 6ft (2m). Leaves are ovate to elliptic and dark green, with dense, pale buff down beneath. Tubular, pale yellow-green to white flowers are produced in spring and intermittently until fall. Z9–11

***C.* 'Carmine Bells'.** See *C.* 'Dusky Bells'.

***C.* 'Dusky Bells'**, syn. *C.* 'Carmine Bells', *C.* 'Pink Bells', *C.* 'Rubra'. H 12–36in (30–90cm), S 5–10ft (1.5–3m). Evergreen, wide-spreading shrub. Has reddish-brown stems and ovate, mid- to deep green leaves. Tubular, dusky carmine-red flowers are borne from fall to spring. Z8–11

***C.* x *harrisii*.** See *C.* 'Mannii'.

***C.* 'Harrisii'.** See *C.* 'Mannii'.

***C.* 'Mannii'**, syn. *C.* x *harrisii, C.* 'Harrisii'. Evergreen, bushy, slender-stemmed shrub. H and S 6ft (2m). Produces narrowly ovate leaves with short hairs beneath. Tubular, scarlet flowers are borne from summer to fall, sometimes in other seasons. Z9–11

***C.* 'Marian's Marvel'.** Evergreen, open, spreading shrub. H 3ft (1m), S 5ft (1.5m). Has long stems, rusty-hairy when young and with upturned ends. Leaves are ovate to heart-shaped, smooth and shiny above, densely rusty-hairy beneath. Tubular pink flowers, with slightly reflexed, creamy-green tips, are borne from early summer to fall. Z8–11

***C.* 'Pink Bells'.** See *C.* 'Dusky Bells'.

C. pulchella illus. p.164.

***C. reflexa*.** Evergreen, bushy, slender-stemmed shrub. H and S to 6ft (2m). Ovate leaves have thick down beneath. Bears tubular, greenish-yellow to crimson or rose flowers, with greenish-white petal tips, in summer–fall, sometimes in other seasons. Z9–11

***C.* 'Rubra'.** See *C.* 'Dusky Bells'.

CORTADERIA

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.

C. richardii illus. p.284.

C. selloana (Pampas grass). Evergreen, clump-forming, stately, perennial grass. H to 8ft (2.5m), S 4ft (1.2m). Has narrow, very sharp-edged, outward-curving leaves, 5ft (1.5m) long. In late summer, erect, plumelike, silvery panicles, up to 2ft (60cm) long, are borne above mid-green leaves. Male and female flowers are produced on separate plants; females, with long, silky hairs, are more decorative. Z8–10.

'Aureolineata' (syn. *C.s.* 'Gold Band'), H to 7ft (2.2m), is compact, and has leaves with rich yellow margins aging to dark golden-yellow. **'Gold Band'** see *C.s.* 'Aureolineata'. **'Pumila'**, H to 5ft (1.5m), S 4ft (1.2m), bears mid-green leaves and abundant, erect, silvery yellow plumes.

'Silver Comet' illus. p.285.

'Sunningdale Silver' illus. p.284.

CORTUSA

PRIMULACEAE

Genus of clump-forming, spring- and summer-flowering perennials, related to *Primula*, with one-sided racemes of bell-shaped flowers. Not suited to hot, dry climates as needs shade and humus-rich, moist soil. Propagate by seed when fresh or by division in fall.

C. matthioli illus. p.341.

CORYDALIS

PAPAVERACEAE

Genus of spring- and summer-flowering annuals, biennials and tuberous or fibrous-rooted perennials, some of which are evergreen, grown for their tubular, spurred, 2-lipped flowers or for their fernlike leaves. Needs full sun or partial shade and well-drained soil; some require humus-rich soil and cool growing conditions. Propagate by seed in fall or by division when dormant: fall for spring-flowering species, spring for summer-flowering species.

C. ambigua of gardens. See *C. fumariifolia*.

C. bulbosa of gardens. See *C. cava*.

***C. cashmeriana*.** Tuft-forming, fibrous-rooted perennial. H 4–10in (10–25cm), S 3–4in (8–10cm). Has divided, semierect, basal leaves and, in summer, dense spikes of 2-lipped, brilliant blue flowers. Needs cool, partially shaded, humus-rich, neutral to acidic soil. Good for a rock garden. Dies down in winter. Z5–7

C. cava, syn. *C. bulbosa* of gardens. Spring-flowering, tuberous perennial. H 4–8in (10–20cm), S 3–4in (8–10cm). Leaves are semierect, basal and much divided. Bears dense spikes of tubular, dull purple flowers. Dies down in summer. Z4–8

C. cheilanthifolia illus. p.335.

C. diphylla illus. p.354.

C. fumariifolia, syn. *C. ambigua* of gardens. Tuberous perennial, flowering from spring to early summer. H to 6in (15cm), S to 4in (10cm). Stem bears much-divided leaves and a short spike of 2-lipped, azure blue or purplish-blue flowers, with flattened, triangular spurs. Dies down in summer. Z4–8

***C. halleri*.** See *C. solida*.

C. lutea, syn. *Pseudofumaria lutea*, illus. p.344.

***C. nobilis*.** Perennial with long, fleshy, fibrous roots. H and S 8–14in (20–35cm). Bears much-divided leaves on lower part of flower stems, each of which bears a dense spike of long-spurred, pale yellow flowers, with lips tipped green or brown, in early summer. Z4–8

C. ochroleuca, syn. *Pseudofumaria alba, Pseudofumaria ochroleuca*, illus. p.337.

C. popovii illus. p.349.

C. solida, syn. *C. halleri*. Tuft-forming, tuberous perennial. H 4–8in (10–20cm), S 3–5in (8–12cm). Leaves alternate on flower stems, each of which bears a dense spike of dull purplish-red flowers in spring. Dies down in summer. Z4–8. **'George Baker'** (syn. *C.s.* 'G.P. Baker') illus. p.353.

C. wilsonii illus. p.335.

CORYLOPSIS

HAMAMELIDACEAE

Genus of deciduous shrubs and trees, grown for their fragrant, yellow flowers, which are produced before hazellike leaves emerge. Late frost may damage flowers. Prefers semishade and fertile, moist but well-drained, acidic soil. Propagate by softwood cuttings in summer or by seed in fall.

C. glabrescens illus. p.111.

C. pauciflora illus. p.126.

C. sinensis, syn. *C. willmottiae*. Vigorous, deciduous, spreading, open shrub. H and S 12ft (4m). Leaves are bright green above, blue-green beneath. Clusters of bell-shaped, pale yellow flowers open from early to midspring. Z6–8. **'Spring Purple'** has deep plum-purple, young leaves.

***C. spicata*.** Deciduous, spreading, open shrub. H 6ft (2m), S 10ft (3m). Bristle-toothed leaves are dull, pale green above, blue-green beneath. Drooping clusters of bell-shaped, pale yellow flowers are borne in midspring. Z6–8

***C. willmottiae*.** See *C. sinensis*.

CORYLUS

Hazel

BETULACEAE

Genus of deciduous trees and shrubs, grown for their habit, catkins and often edible fruits (nuts). Prefers sun or semishade and fertile, well-drained soil. Cut out suckers as they arise. Propagate species by seed in fall, cultivars by grafting in late summer or by suckers or layering in late fall to early spring. Mildew may cause defoliation; other fungi and insects may spoil nuts.

C. avellana (Cobnut). **'Contorta'** (Corkscrew hazel) illus. p.118.

'Fuscorubra' of gardens see *C.a.* 'Rotblättrige Zellernus'. **'Red Majestic'** is a distinctive, upright shrub. H 10ft (3m), S 6ft (2m). Has twisted, slightly pendulous shoots bearing bright reddish-purple leaves in spring, becoming paler by summer. Produces reddish catkins on the bare twigs in late winter. **'Red Zellernut'** see *C.a.* 'Rotblättrige Zellernus'.

'Rotblättrige Zellernuss' (syn. *C.a.* 'Fuscorubra' of gardens, *C.a.* 'Red Zellernut', *C. maxima* 'Red Filbert' of gardens, *C. m.* 'Red Zellernut'), H 10–12ft (3–4m), S 6–10ft (2–3m), has large, roundish, coarsely toothed leaves, dark reddish-purple on top, lighter burgundy-red below, maturing dark purplish-green. In early spring, showy, pendent, purplish-pink male catkins are borne on bare branches. Produces large, red-shelled nuts in reddish husks in early fall. Z5–9

C. colurna (Turkish hazel). Deciduous, conical tree. H 70ft (20m), S 22ft (7m). Has broadly ovate, strongly toothed, almost lobed, dark green leaves. Long, yellow catkins are borne in late winter. Clusters of nuts are set in fringed husks. Z4–8

C. maxima (Filbert). Vigorous, deciduous, bushy, open shrub or tree. H 20ft (6m), S 15ft (5m). Bears ovate, toothed, mid-green leaves, long, yellow catkins in late winter and edible, egg-shaped, brown nuts. Z4–8. **'Purpurea'** illus. p.115. **'Red Filbert'** of gardens see *C. avellana* 'Rotblättrige Zellernuss'. **'Red Zellernut'** see *C. avellana* 'Rotblättrige Zellernus'.

CORYNOCARPUS

CORYNOCARPACEAE

Genus of evergreen trees, grown for their foliage and overall appearance. Needs full light or partial shade and fertile, moisture-retentive but well-drained soil. Water containerized specimens moderately, less when temperatures are low. Pruning is tolerated if necessary. Propagate by seed when ripe or by semiripe cuttings in summer.

C. laevigatus illus. p.451.

CORYPHANTHA

CACTACEAE

Genus of perennial cacti with roughly spherical, spiny, green stems. Stems have elongated areoles in grooves running along upper sides of tubercles; many species only show this groove on very old plants. Funnel-shaped flowers are produced in summer, followed by cylindrical, green seed pods. Needs a site in full sun with very well-drained soil. Propagate by seed in spring or summer.

C. cornifera, syn. *C. radians*, illus. p.480.

***C. radians*.** See *C. cornifera*.

***C. vivipara*.** See *Escobaria vivipara*.

COSMOS

ASTERACEAE/COMPOSITAE

Genus of summer- and early fall-flowering annuals and tuberous perennials. Needs sun and does best in moist but well-drained soil. In mild-winter regions, tubers of *C. atrosanguineus* may be overwintered in ground if protected with deep mulch. Propagate hardy species by basal cuttings in spring, annuals by seed in fall or spring.

C. atrosanguineus, syn. *Bidens atrosanguinea*, illus. p.238. **Chocamocha ('Thomocha')** illus. p.306.

***C. bipinnatus*.** Upright, bushy annual. H to 5ft (1.5m), S 1½ft (45cm). Has feathery, mid-green leaves, and, throughout summer, produces solitary, bowl- or saucer-shaped flower heads in white, pink, or crimson, with yellow centers. Z9–11.

Cupcakes Series, H to 4ft (1.2m), S 2ft (60cm), has fluted, single or semidouble flower heads, the outer petals fused together to form a bowl, in white, pale pink or pink with darker petal bases.

Razzmatazz Series, H 32–36in (80–100cm), S 12in (30cm), is compact, with semidouble flower heads in white and shades of pink, sometimes edged with darker pink. Good in containers.

Sensation Series illus. p.305. **Sonata Series** cultivars, H and S 12in (30cm), are dwarf, with flower heads in carmine-red, pink or white, and are especially suitable for an exposed garden. **'Sonata Pink'** has pink flower heads. **'Sonata White'**, H to 18in (45cm), has pure white flowers.
***C. sulfureus* Ladybird Series.** Group of upright, bushy annuals. H 12–16in (30–40cm), S 8in (20cm). Has feathery, mid-green leaves, and in summer produces clusters of semidouble, bowl-shaped flower heads in yellow, orange, or scarlet, with black centers. Z9–11

COSTUS

COSTACEAE

Genus of mostly clump-forming, rhizomatous perennials, grown for their showy, solitary or paired, tubular flowers with basal bracts. Grow in a humid atmosphere, out of direct sunlight, in humus-rich soil. Propagate by division in spring. Container-grown plants may be attacked by red spider mite.
C. speciosus (Malay ginger; illus. p.477). Clump-forming, rhizomatous perennial. H 6ft (2m) or more, S 3ft (1m). Has narrowly ovate, downy leaves, to 10in (25cm) long. Reddish bracts are spine-tipped, each surrounding one white or pink-flushed flower, to 4in (10cm) across, with a broad, yellow-centered lip; flowers are produced intermittently throughout the year. Z12 (min. 64°F/18°C)

COTINUS

ANACARDIACEAE

Genus of deciduous shrubs and trees, grown for their foliage, flower heads and fall color. Individual flowers are inconspicuous. Needs full sun or semishade, with fertile but not over-rich soil. Purple-leaved forms need full sun to bring out best color. Propagate species by softwood or greenwood cuttings in summer or by seed in fall, cultivars by cuttings only in summer.
***C. americanus*.** See *C. obovatus*.
C. coggygria, syn. *Rhus cotinus* (Smoke tree, Venetian sumach). Deciduous, bushy shrub. H and S 15ft (5m). Leaves are rounded or ovate and light green, becoming yellow or red in fall. From late summer, as insignificant fruits develop, a mass of tiny flower stalks form showy, pale fawn, later gray, plumelike clusters. Z5–8. **'Flame'** see *C.* 'Flame'. **Golden Spirit ('Ancot')** (Golden Smoke Bush) illus. p.116. **'Royal Purple'** has deep pink plumes and deep purplish-red leaves. **'Young Lady'** is a slow-growing, compact shrub, with mid-green leaves that may be tinted orange and scarlet in fall; exceptionally free-flowering from an early age, it bears large plumes of smoky pink fruiting panicles in summer.
***C.* 'Flame'**, syn. *C. coggygria* 'Flame', illus. p.117.
C. obovatus, syn. *C. americanus, Rhus cotinoides*. Vigorous, deciduous, bushy shrub or tree. H 30ft (10m), S 25ft (8m). Produces large, ovate leaves that are bronze-pink when young, maturing to mid-green and turning orange, red and purple in fall. Z5–8

COTONEASTER

ROSACEAE

Genus of deciduous, semievergreen or evergreen shrubs and trees, grown for their foliage, flowers and fruits. Some species are fine specimen plants; others may be used for hedging or groundcover. Deciduous species and cultivars prefer full sun, but evergreens do well in either sun or semishade. All resent waterlogged soil and are particularly useful for dry sites. Propagate species by cuttings in summer or by seed in fall, hybrids and cultivars by cuttings only, in summer. Take semiripe cuttings for evergreens and semievergreens, softwood cuttings for deciduous plants. Fireblight is a common problem. ⓘ Seeds may cause mild stomach upset if ingested.
***C. adpressus*.** Deciduous, arching shrub. H 1ft (30cm), S 6ft (2m). Rounded, wavy-edged, dark green leaves redden in fall. Produces small, 5-petaled, pink flowers in early summer, then spherical, red fruits. Z4–7
***C. atropurpureus* 'Variegatus'**, syn. *C. horizontalis* 'Variegatus'. Compact, deciduous shrub with spreading, arching branches. H 18in (45cm), S 36in (90cm). Ovate, gray-green, white-margined leaves turn pink and red in fall. Bears small, 5-petaled, pink flowers in summer, then almost spherical, bright red fruits. Z4–7
***C.* 'Autumn Fire'.** See *C. salicifolius* 'Herbstfeuer'.
***C. bullatus* 'Firebird'.** See *C. ignescens*.
var. *macrophyllus* see *C. rehderi*.
C. cashmiriensis, syn. *C. cochleatus* of gardens, *C. microphyllus* var. *cochleatus* of gardens. Evergreen, prostrate shrub. H to 1½ft (45cm), S 6ft (2m). Has small, ovate, notched, dark green leaves. Small, white flowers are produced in late spring, followed by spherical, red fruits. Z4–7
C. cochleatus of gardens. See *C.cashmiriensis*.
***C. congestus*.** Evergreen, prostrate shrub. H 8in (20cm), S 6ft (2m). Forms dense mounds of ovate, dull green leaves. Bears small, 5-petaled, pinkish-white flowers in early summer, followed by spherical, bright red fruits. Excellent for a rock garden. Z5–8
C. conspicuus, syn. *C.c.* var. *decorus* (illus. p.142). Evergreen, prostrate, arching shrub. H 1ft (30cm), S 6–10ft (2–3m). Leaves are oblong, glossy, very dark green. Small, 5-petaled, white flowers in late spring are followed by large, spherical, scarlet or orange-red fruits. Z5–8
***C.* 'Coral Beauty'.** See *C.* x *suecicus* 'Coral Beauty'.
***C.* 'Cornubia'** illus. p.117.
***C.* 'Exburiensis'.** Evergreen or semievergreen, arching shrub. H and S 15ft (5m). Has narrowly lance-shaped, bright green leaves. Small, 5-petaled, white flowers in early summer are followed by spherical, yellow fruits, sometimes tinged pink. Z5–8
***C.* 'Firebird'.** See *C. ignescens*.
C. franchetii*.** Evergreen or semievergreen, arching shrub. H and S 10ft (3m). Ovate, gray-green leaves are white beneath. Bears small, 5-petaled, pink-tinged, white flowers in early summer, followed by a profusion of oblong, bright orange-red fruits. Z5–8. **var. *sternianus see *C. sternianus*.
C. frigidus (Tree cotoneaster; illus. p.142). Vigorous, deciduous tree, upright when young, arching when mature. H and S 30ft (10m). Has large, broadly ovate, wavy-edged, dull green leaves and broad heads of small, 5-petaled, white flowers borne in early summer, followed by large clusters of long-lasting, small, spherical, bright red fruits. Z4–7
***C.* 'Gnom'**, syn. *C.* 'Gnome', *C. salicifolius* 'Gnom'. Evergreen, prostrate shrub. H 8in (20cm), S 6ft (2m). Bears narrowly lance-shaped, dark green leaves, small, 5-petaled, white flowers, in early summer, and clusters of small, spherical, red fruits. Good for groundcover. Z4–7
***C.* 'Gnome'.** See *C.* 'Gnom'.
***C.* 'Herbstfeuer'.** See *C. salicifolius* 'Herbstfeuer'.
C. horizontalis (Wall-spray) illus. p.209.
'Variegatus' see *C. atropurpureus* 'Variegatus'.
***C.* 'Hybridus Pendulus'.** Evergreen, prostrate shrub, almost always grown as a weeping standard. H 6ft (2m), S 5ft (1.5m). Has oblong, dark green leaves and small, 5-petaled, white flowers in early summer, followed by spherical, deep red fruits. Z5–8
C. ignescens, syn. *C. bullatus* 'Firebird', *C.* 'Firebird'. Deciduous, bushy, open shrub. H and S 10ft (3m). Large, ovate, deeply veined, dark green leaves redden in fall. Small, 5-petaled, white flowers in early summer are followed by profuse, spherical, bright red fruits. Z5–8
C. integrifolius, syn. *C. microphyllus* of gardens Evergreen, spreading, dense shrub. H 3ft (1m), S 6ft (2m). Rigid shoots are clothed in small, ovate, dark green leaves. Small, 5-petaled, white flowers in late spring are followed by spherical, red fruits. Z5–8
C. lacteus illus. p.117.
***C. linearifolius*.** See *C. thymifolius*.
C. microphyllus of gardens**.** See *C. integrifolius*. **var. *cochleatus*** of gardens see *C. cashmiriensis*. **var. *thymifolius*** of gardens see *C. thymifolius*.
***C. procumbens* 'Queen of Carpets'.** Evergreen, prostrate, carpeting shrub. H to 1ft (30cm), S 4ft (1.2m). Has ovate, glossy, mid-green leaves. In summer, bears small, white, pink-tinged flowers with purple anthers, followed by almost spherical, dark pink to crimson fruits. Z4–7
C. rehderi, syn. *C. bullatus* var. *macrophyllus*. Deciduous, bushy, open shrub. H 15ft (5m), S 10ft (3m). Very large, ovate, deeply veined, dark green leaves change to red in fall. Clusters of small, 5-petaled, pink flowers are borne in late spring and early summer, succeeded by spherical, bright red fruits. Z5–8
***C.* 'Rothschildianus'.** Evergreen or semievergreen, arching shrub. H and S 15ft (5m). Has narrowly ovate, bright green leaves, small, 5-petaled, white flowers, in early summer, and large clusters of spherical, golden-yellow fruits. Z5–8
C. salicifolius (illus. p.142). Vigorous, evergreen, arching shrub. H and S 15ft (5m). Has narrowly lance-shaped, dark green leaves. Small, 5-petaled, white flowers, in early summer, are followed by clusters of small, spherical, red fruits. Z5–8. **'Gnom'** see *C.* 'Gnom'.
'Herbstfeuer' (syn. *C.* 'Autumn Fire', *C.* 'Herbstfeuer'), H 1ft (30cm), S 6ft (2m), is a prostrate or arching shrub with bright green leaves. May be grown as ground-cover or as a weeping standard.
C. simonsii illus. p.143.
***C.* 'Skogsholmen'.** See *C.* x *suecicus* 'Skogholm'.
C. sternianus, syn. *C. franchetii* var. *sternianus*, illus. p.141.
***C.* x *suecicus* 'Coral Beauty'**, syn. *C.* 'Coral Beauty'. Evergreen, arching, dense shrub. H 3ft (1m), S 6ft (2m). Has small, ovate, glossy, dark green leaves. In early summer, produces clusters of small, 5-petaled, white flowers, followed by profuse, spherical, bright orange-red fruits. Ideal as groundcover. Z4–7.
'Juliette' has creamy-white-margined, gray-green leaves and large, orange fruits; usually grown as a small standard and is suitable for growing in large pots.
'Skogholm' (syn. *C.* 'Skogsholmen'), H 2ft (60cm), S 10ft (3m), is more or less prostrate, with flowers borne singly or in small clusters in late spring, followed by rather sparse, red fruits. Good for groundcover.
C. thymifolius, syn. *C. linearifolius, C. microphyllus* var. *thymifolius* of gardens. Evergreen, prostrate shrub. H 2ft (60cm), S 6ft (2m). Rigid branches bear tiny, narrow, blunt-ended, glossy leaves. Produces small, white flowers in late spring, followed by spherical red fruits. Z5–8

COTULA

ASTERACEAE/COMPOSITAE

Genus of annuals and perennials and a few water plants, grown for their neat foliage and buttonlike flower heads. Many species are useful for cracks in paving stones, but may be invasive. Most need a position in full sun, with well-drained soil that is not too dry. Propagate by division in spring.
***C. atrata*.** See *Leptinella atrata*.
C. coronopifolia (Brass buttons). Annual or short-lived, deciduous, perennial, suitable for a pond margin, a bog garden or a damp border. H 6in (15cm), S 12in (30cm). Has fleshy stems, small, lance-shaped, mid-green leaves and, in summer, buttonlike, yellow flower heads. Z6–11

COTYLEDON

CRASSULACEAE

Genus of compact, often clump-forming, perennial succulents and evergreen subshrubs, grown for their diverse foliage that ranges from large, ovate, gray leaves to small, cylindrical, mid-green leaves. Prefers a sunny or partially shaded site and very well-drained soil. Propagate by seed or stem cuttings in spring or summer.
***C. cooperi*.** See *Adromischus cooperi*.
***C. orbiculata*.** Evergreen, shrubby, erect, freely branching succulent. H to 5ft (1.5m), S 20in (50cm). Has thick, fleshy stems and ovoid, white-frosted-waxy, white or gray leaves. Tubular, red or yellowish-red flowers, ½–1½in (1–4cm) long, are borne in fleshy inflorescences, from late summer to fall. Z10–11 (min. 41°F/5°C)
***C. paniculata*.** See *Tylecodon paniculatus*.
***C. reticulata*.** See *Tylecodon reticulatus*.
C. simplicifolia of gardens**.** See *Umbilicus oppositifolius*.

***C. tomentosa* subsp. *ladismithensis*.** Evergreen, freely branching, later prostrate, succulent subshrub. H and S 8in (20cm). Has fleshy, green leaves, swollen and blunt at tips and covered with short, golden-brown hairs. Clusters of tubular, brownish-red flowers are produced in fall. Z10–12 (min. 41°F/5°C)
***C. wallichii*.** See *Tylecodon wallichii*.

CRAMBE

BRASSICACEAE/CRUCIFERAE

Genus of annuals and, often woody-based, perennials, grown for their bold leaves and large sprays of white flowers in summer. Leaf shoots of *C. maritima* (sea kale) are eaten as a spring vegetable. Will grow in any well-drained soil; prefers an open position in full sun but tolerates some shade. Propagate by division in spring or by seed in fall or spring.
C. cordifolia illus. p.216.
C. maritima (Sea kale) illus. p.264.

CRASPEDIA

ASTERACEAE/COMPOSITAE

Genus of basal-rosetted, summer-flowering annuals and perennials, grown for their flowers and foliage. Flower heads are useful for dried arrangements. Requires a site in sun and well-drained soil. Suitable for a rock garden or scree bed. Propagate by seed sown when very fresh in summer.
***C. incana*.** Basal-rosetted perennial. H 8–12in (20–30cm), S 4in (10cm). Has narrowly ovate, basal leaves, with dense, woolly, white hairs beneath, and smaller leaves on flower stems. In summer, many domed heads of 3–10 tiny, tubular, yellow flowers are produced in large, terminal clusters. Z9–11

CRASSULA

CRASSULACEAE

Genus of annual and perennial succulents and evergreen, succulent shrubs and subshrubs, ranging from very succulent-leaved species, ¾in (2cm) high, to shrubby types, 15ft (5m) high. Most are easy to grow; in frost-prone areas, grow as houseplants. Most prefer full sun; others like partial shade. Needs very well-drained soil and a little water in winter. Propagate by seed or stem cuttings in spring or fall.
C. arborescens (Silver jade plant) illus. p.490.
C. argentea of gardens. See *C. ovata*.
C. coccinea, syn. *Rochea coccinea*. Evergreen, erect, succulent shrub. H to 2ft (60cm), S 12in (30cm) or more. Alternate pairs of fleshy, ovate to oblong-, hairy-margined, dull green leaves, each united at the base, are arranged at right angles in 4 rows up the woody, green stems. Produces umbels of tubular, bright red flowers in summer or fall. Z10–11 (min. 41–45°F/5–7°C)
C. deceptor, syn. *C. deceptrix*, illus. p.488.
***C. deceptrix*.** See *C. deceptor*.
***C. falcata*.** See *C. perfoliata* var. *minor*.
***C. lactea*.** Prostrate to semierect, perennial succulent. H 8in (20cm), S 3ft (1m). Leaves are triangular-ovate, glossy and dark green. In winter, produces an abundance of small, 5-petaled, white flowers in terminal clusters. Likes partial shade. Z10–11 (min. 41–45°F/5–7°C)
***C. lycopodioides*.** See *C. muscosa*.
C. multicava illus. p.484.
C. muscosa, syn. *C. lycopodioides*. Dense, bushy, woody-based, perennial succulent. H 6in (15cm), S 12in (30cm). Bears small, scalelike, neatly overlapping, mid-green leaves arranged in 4 rows around erect stems. In spring, produces tiny, 5-petaled, greenish-yellow flowers. Likes partial shade. Z10–11 (min. 41–45°F/5–7°C)
C. ovata, syn. *C. argentea* of gardens, *C. portulacea* (Friendship tree, Jade tree, Money tree), illus. p.481.
C. perfoliata* var. *minor, syn. *C. falcata* (Aeroplane propellor), illus. p.489.
***C. portulacea*.** See *C. ovata*.
C. sarcocaulis illus. p.339.
C. schmidtii illus. p.485.
C. socialis illus. p.480.

+ CRATAEGOMESPILUS

ROSACEAE

Group of grafted, hybrid, deciduous trees *(Crataegus and Mespilus)*, grown for their flowers, foliage and fruits. Requires sun or semishade and fertile, well-drained soil. Propagate by grafting in late summer.
+ *C. dardarii* (Bronvaux medlar). **'Jules d'Asnières'** is a deciduous, spreading tree. H and S 20ft (6m). Has drooping branches and spiny shoots. Variable, ovate or deeply lobed, dark green leaves, gray when young, turn orange and yellow in fall. Clusters of saucer-shaped, white, sometimes rose-tinted, flowers in late spring or early summer are followed by small, rounded, red-brown fruits. Z8–10

CRATAEGUS

Hawthorn, Thorn

ROSACEAE

Genus of deciduous, or more rarely semievergreen, spiny, often spreading trees and shrubs, grown for their clustered, 5-petaled, occasionally double flowers in spring–summer, ornamental fruits and, in some cases, fall color. Prefers full sun but is suitable for most sites and may be grown in any but very wet soil. Useful for growing in polluted urban areas, exposed sites and coastal gardens. Propagate species by seed in fall, cultivars by budding in late summer. Fireblight is sometimes a problem. ⓘ The seeds may cause mild stomach upset if ingested.
C. coccinea, syn. *C. pedicellata*, illus. p.90.
***C. cordata*.** See *C. phaenopyrum*.
C. crus-galli (Cockspur thorn). Deciduous, flat-topped tree. H 25ft (8m), S 30ft (10m). Has shoots armed with long, curved thorns and ovate, glossy, dark green leaves that turn bright crimson in fall. Bears clusters of white flowers, with pink anthers, in late spring, followed by long-lasting, rounded, bright red fruits. Z3-7
C. crus-galli of gardens. See *C. persimilis* 'Prunifolia'.
***C. ellwangeriana*.** Deciduous, spreading tree. H and S 20ft (6m). Broadly ovate, dark green leaves are shallowly toothed and lobed. Bears clusters of white flowers, with pink anthers, in late spring, followed by rounded, glossy, crimson fruits. Z3–7
C.* x *grignonensis. Small, deciduous or semievergreen, spreading tree. H 15ft (5m), S 12ft (4m). Has almost thornless shoots with dark green leaves, glossy above, paler and more densely hairy beneath. Many small white flowers, which fade to pink, are produced in clusters in late spring to early summer, followed by showers of late-ripening, shiny, red fruits, which often persist into spring. Z7–10
C. laciniata of gardens. See *C. orientalis*.
C. laevigata, syn. *C. oxyacantha* of gardens (Hawthorn, May). **'Paul's Scarlet'** illus. p.84. **'Punicea'** is a deciduous, spreading tree. H and S 20ft (6m). In late spring and early summer, bears clusters of crimson flowers amid ovate, lobed, toothed, glossy, dark green leaves, followed by rounded, red fruits. **'Rosea Flore Pleno'** bears double pink flowers. Z4–8
***C.* x *lavallei* 'Carrierei'*.** Vigorous, deciduous, spreading tree. H 22ft (7m), S 30ft (10m). Ovate, glossy, dark green leaves turn red in late fall. Bears clusters of white flowers in late spring, followed by long-lasting, rounded, orange-red fruits. Z4–8
***C. mollis*.** Deciduous, spreading tree. H 30ft (10m), S 40ft (12m). Large, broadly ovate, lobed, dark green leaves have white-haired undersides when young. Produces heads of large, white flowers in late spring, followed by short-lived, rounded, red fruits. Z4–8
C. monogyna (Common hawthorn). Deciduous, round-headed tree. H 30ft (10m), S 25ft (8m). Has broadly ovate, deeply lobed, glossy, dark green leaves. Clusters of fragrant, white flowers are produced from late spring to early summer, followed by rounded, red fruits. Will form a dense hedge. Z4–8. **'Biflora'** (Glastonbury thorn) has flowers and leaves in mild winters as well as in spring.
C. orientalis, syn. *C. laciniata* of gardens, illus. p.80.
C. oxyacantha of gardens. See *C. laevigata*.
***C. pedicellata*.** See *C. coccinea*.
C.* x *persimilis* 'Prunifolia', syn. *C. crus-galli* of gardens, *C.* x *prunifolia*. Deciduous, spreading, thorny tree. H 25ft (8m), S 30ft (10m). Ovate, glossy, dark green leaves turn red or orange in fall. Has clusters of white flowers, with pink anthers, in early summer, then rounded, dark red fruits. Z6–8
C. phaenopyrum, syn. *C. cordata* (Washington thorn). Deciduous, round-headed tree. H and S 30ft (10m). Broadly ovate leaves are sharply lobed, glossy and dark green. Clusters of white flowers, with pink anthers, are produced from early to midsummer, followed by rounded, glossy, red fruits that last through winter. Z4–8
***C.* x *prunifolia*.** See *C. persimilis* 'Prunifolia'.
C. tanacetifolia (Tansy-leaved thorn). Deciduous, upright, usually thornless tree. H 30ft (10m), S 25ft (8m). Has ovate to diamond-shaped, deeply cut, gray-green leaves, clusters of fragrant, white flowers, with red anthers, in midsummer, and small, apple-shaped, yellow fruits. Z6–8

CREMANTHODIUM

ASTERACEAE/COMPOSITAE

Genus of basal-rosetted perennials, grown for their pendent, half-closed, daisylike flower heads. Grow in woodland, a rock garden, or an alpine house. Dislikes winter wet. Needs shade and humus-rich, moist but well-drained soil. Propagate by seed when fresh.
***C. reniforme*.** Basal-rosetted perennial. H and S 8in (20cm). Leaves are large, kidney-shaped, toothed, glossy, mid-green. Sturdy stems each bear a large, daisylike, yellow flower head in summer. Z5–8

CREPIS

Hawk's beard

ASTERACEAE/COMPOSITAE

Genus of summer-flowering annuals and perennials with long tap roots and leaves in flat rosettes. Many species are persistent weeds, but some are grown for their many-petaled, dandelionlike flower heads. Tolerates sun or shade and prefers well-drained soil. Propagate annuals and biennials by seed in fall, perennials by root cuttings (not from tap root) in late winter; most species self-seed freely.
C. aurea illus. p.345.
C. incana (Pink dandelion). Basal-rosetted perennial. H 8in (20cm), S 4in (10cm). Bears oblong, divided, hairy, grayish-green leaves. Uneven discs of ragged, pink flower heads are borne on stiff stems in summer. Good for a sunny rock garden or border. Z3–9
***C. rubra*.** Fairly fast-growing, rosette-forming annual. H 12in (30cm), S 6in (15cm). Has lance-shaped, serrated leaves. In summer, bears dandelionlike, pink, occasionally red or white flower heads. Z3–10

CRINODENDRON

ELAEOCARPACEAE

Genus of evergreen shrubs and trees, grown for their flowers and foliage. Requires shade or semishade, with plant base in cool shade, and fertile, moist but well-drained, acidic soil. Propagate by softwood cuttings in summer or by seed in fall.
C. hookerianum, syn. *Tricuspidaria lanceolata* (Lantern tree), illus. p.202.
C. patagua illus. p.113.

x *Crinodonna*. See x *Amarcrinum*.

CRINUM

AMARYLLIDACEAE

Genus of robust bulbs, grown for their often fragrant, funnel-shaped flowers. Needs full sun, shelter and rich, well-drained soil. Propagate by offsets in spring or by seed when fresh or in spring. ⓘ All parts may cause severe discomfort if ingested; contact with the sap may irritate skin.
C. bulbispermum, syn. *C. longifolium*. Summer-flowering bulb. H to 3ft (1m), S 2ft (60cm). Leafless flower stem bears a head of fragrant, long-tubed, white or pinkish-red flowers with darker red stripes. Long, strap-shaped, semierect leaves are grouped in a tuft on a short stalk. Z7–10

***C. longifolium*.** See *C. bulbispermum*.
***C. macowanii*.** Fall-flowering bulb. H and S 2ft (60cm) or more. Similar to *C. bulbispermum*, but leaves are wavy-edged. Z9–11
C. moorei illus. p.383.
C.* x *powellii illus. p.385. **'Album'** illus. p.383.

CROCOSMIA

Montbretia

IRIDACEAE

Genus of cormous perennials, grown for their brightly colored flowers, borne mainly in summer. Forms dense clumps of sword-shaped, erect leaves. Requires well-drained soil and an open, sunny site. In very cold areas, plant in a sheltered position or lift and store corms over winter. Propagate by division as growth starts in spring.
***C. aurea*.** Tuft-forming, summer-flowering corm. H 20–30in (50–75cm), S 6–8in (15–20cm). Erect, basal leaves are long, narrow and sword-shaped. Bears a loosely branched spike of tubular, orange or yellow flowers, each 1–2in (3–5cm) long and with 6 spreading petals. Z8–11
***C.* 'Bressingham Blaze'.** Clump-forming, late summer-flowering corm. H 30in (75cm), S 6–8in (15–20cm). Produces sword-shaped, pleated, basal, erect leaves. Branched stem bears widely funnel-shaped, fiery-red flowers. Z8–11
***C.* x *crocosmiiflora*.** Robust, sometimes invasive, variable, late summer-flowering corm. H 2ft (60cm), S 3in (8cm). Has erect, sword-shaped, pale green, basal leaves. Produces thin, slightly arching, sometimes branched spikes of funnel-shaped, orange or yellow flowers in summer. Z6–10.
'Buttercup' produces rich yellow flowers that open flat; Z6–10. **'Coleton Fishacre'** (syn. *C.* 'Golden Fleece') illus. p.412.
'Emily McKenzie' (syn. *C.* 'Emily McKenzie'), H to 2ft (60cm), S 6–8in (15–20cm), is compact, with a dense spike of widely funnel-shaped, deep orange flowers, each with a dark mahogany throat; Z6–10.
'George Davison' (syn. *C.* 'George Davison'; illus. p.410), H 3–4ft (90–120cm), S 6in (15cm), produces branched stems bearing large, trumpet-shaped, pale orange-yellow flowers, tinted deeper orange externally; Z6–10. **'Harlequin'** (syn. *C.* 'Harlequin'), H 36in (90cm), S 3in (8cm), has well-branched, upright stems bearing funnel-shaped, bright yellow flowers with alternate, red and orange outer petals; Z6–10. **'Honey Angels'** (syn. *C.* 'Honey Angels'; illus. p.410), H 30in (75cm), S 6in (15cm), has sword-shaped, erect, pleated, bronzed-green leaves and trumpet-shaped, pale yellow flowers; Z6–10. **'Jackanapes'** (syn. *C.* 'Jackanapes'; illus. p.410), H 16–24in (40–60cm), S 6–8in (15–20cm), produces striking bicolored, yellow and orange-red flowers; Z6–10.
'Lady Hamilton' (syn. *C.* 'Lady Hamilton'), H 24–30in (60–75cm), bears golden yellow flowers with apricot-yellow centers, on erect, branched spikes in late summer; Z6–10. **'Solfatare'** (syn. *C.* 'Solfatare'; illus. p.410), H 26–28in (65–70cm), S 6in (15cm), has trumpet-shaped pale to mid-yellow flowers; Z6–10. **'Star of the East'** (syn. *C.* 'Star of the East'; illus. p.410), H 28in (70cm), S 3in (8cm), bears horizontal-facing, funnel-shaped, clear orange flowers, with a paler orange center, on branched stems; Z6–10.
***C.* 'Emily McKenzie'.** See *C.* x *crocosmiiflora* 'Emily McKenzie'.
***C.* 'George Davison'.** See *C.* x *crocosmiiflora* 'George Davison'.
***C.* 'Golden Fleece'.** See *C.* x *crocosmiiflora* 'Coleton Fishacre'.
***C.* 'Harlequin'.** See *C.* x *crocosmiiflora* 'Harlequin'.
***C.* 'Honey Angels'.** See *C.* x *crocosmiiflora* 'Honey Angels'.
***C.* 'Jackanapes'.** See *C.* x *crocosmiiflora* 'Jackanapes'.
***C.* 'Lady Hamilton'.** See *C.* x *crocosmiiflora* 'Lady Hamilton'.
***C.* 'Lucifer'** (illus. p.410). Robust, clump-forming corm. H to 3ft (1m), S 8–10in (20–25cm). Has sword-shaped, erect, basal, bright green leaves. In midsummer, bears funnel-shaped, deep rich red flowers in dense, branching spikes. Z6–9
C. masoniorum, syn. *C. masonorum* (illus. p.410). Robust, clump-forming corm. H to 5ft (1.5m), S 1–1½ft (30–45cm). Has erect, basal, deep green leaves, pleated lengthways. Erect, branched stem has a horizontal upper part, which bears reddish-orange flowers in summer-fall. Z6–10. **'Rowallane Yellow'**, H 3ft (1m), S 3in (8cm), has upward-facing, funnel-shaped, yellow flowers.
***C. masonorum*.** See *C. masoniorum*.
C. paniculata, syn. *Antholyza paniculata, Curtonus paniculatus*. Summer-flowering corm. H to 5ft (1.5m), S 1–1½ft (30–45cm). Has sword-shaped, erect, basal leaves, pleated lengthways. Produces long-tubed, orange flowers on branched stems, which are strongly zig-zag in shape. Z5–9
***C.* 'Severn Sunrise'** (illus. p.410). Late summer-flowering corm. H 36in (90cm), S 3in (8cm). Has erect, sword-shaped, mid-green, basal leaves. Produces tightly clustered, funnel-shaped flowers in shades of salmon, apricot and yellow. Z5–9
***C.* 'Solfatare'.** See *C.* x *crocosmiiflora* 'Solfatare'.
***C.* 'Star of the East'.** See *C.* x *crocosmiiflora* 'Star of the East'.

CROCUS

IRIDACEAE

Genus of mainly spring- or fall-flowering cormous perennials, grown for their funnel-shaped to rounded, long-tubed flowers. Produces long, very narrow, semierect, basal leaves, each with a white line along center, usually 1–5 per corm. Some fall-flowering species have no leaves at flowering time, these appearing in winter or spring. Most species are less than 4in (10cm) tall when in flower and have a spread of 1–3in (2.5–8cm). Ideal for rock gardens, for planting in drifts at the front of a border and for forcing in bowls for an early indoor display. The most vigorous can be naturalized in short turf. Most require well-drained soil and a sunny situation; *C. banaticus* prefers moist soil and semishade. Plant 2–2½in (5–6cm) deep, in late summer or early fall. Propagate in early fall by seed or division of corm clumps. See also feature panel p.417.
***C.* 'Advance'.** Late winter- to midspring-flowering corm. Funnel-shaped flowers are buttercup yellow inside and paler yellow outside, suffused violet-bronze. Z4–8
C. aerius of gardens. See *C. biflorus* subsp. *pulchricolor*.
***C. ancyrensis*.** Spring-flowering corm. Produces up to 7 fragrant, bright orange-yellow flowers, 2–2½in (5–6cm) long. Z4–8
C. angustifolius, syn. *C. susianus* (Cloth-of-gold crocus). Spring-flowering corm. Produces 5 or more fragrant flowers, which are bright golden-yellow, and striped or stained bronze outside. Z4–8
***C. aureus*.** See *C. flavus*.
***C. balansae*.** See *C. olivieri* subsp. *balansae*.
C. banaticus, syn. *C. iridiflorus*. Fall-flowering corm, with solitary flowers. Usually has one long-tubed, pale violet flower; outer 3 petals open wide and are much larger than 3 erect, paler, inner petals. Dark green leaves, without central stripes, are borne after the flowers. Z4–8
***C. baytopiorum*.** Spring-flowering corm. Each bears 1 or 2 rounded, turquoise-blue, slightly darker-veined flowers. Z4–8
C. biflorus*.** Very variable, early spring-flowering corm. Bears fragrant, white or purplish-white flowers, with yellow throats, the outer petals sometimes vertically striped purple or brownish purple. Z4–8. **subsp. *alexandri has fragrant white flowers, the outer petals heavily marked deep purple. **'Blue Pearl'** (syn. *C.* 'Blue Pearl') illus. p.421. **subsp. *pulchricolor*** (syn. *C. aerius* of gardens) has rich deep blue flowers, stained dark violet near the bases, with yellow throats. **subsp. *weldenii* 'Fairy'** has white flowers, the outer tepals dusted violet.
***C.* 'Blue Bird'** (illus. p.417). Late winter- to midspring-flowering corm. Funnel-shaped flowers are white inside with deep yellow throats and violet margined with white outside. Z4–8
***C.* 'Blue Pearl'.** See *C. biflorus* 'Blue Pearl'.
***C. boryi*.** Fall-flowering corm. Bears up to 4 well-rounded, creamy-white flowers, sometimes veined or flushed with mauve outside, with the leaves. Z6–10
***C. cancellatus*.** Very variable, fall-flowering corm. Produces 1–3, slender pale blue flowers, striped violet outside. Gray-green leaves form after flowering, in spring. Z4–8
***C. cartwrightianus*.** Fall- and early winter-flowering corm. Produces leaves with, or shortly after, 1–5, open goblet-shaped, fragrant, violet or white flowers, strongly veined dark purple, with 3 long, bright red stigmas, similar to those of *C. sativus*. Z4–8
***C. chrysanthus*.** Late winter and early spring-flowering corm. Has dull green leaves and bears up to 4 rounded, scented flowers, varying from cream to deep golden yellow, often suffused or veined bronze-maroon outsidea and with orange-red stigmas. Z4–8. **'Cream Beauty'** see *C.* 'Cream Beauty'. **'Zwanenberg Bronze'** see *C.* 'Zwanenberg Bronze'.
***C.* 'Cream Beauty'** (illus. p.417), syn. *C. chrysanthus* 'Cream Beauty'. Compact, spring-flowering corm. Scented, rich cream flowers have deep yellow throats, and are stained purplish-brown at the base. Z4–8
***C. cvijicii*.** Spring-flowering corm. Usually has one funnel-shaped, yellow flower, sometimes white or cream. Leaves are only just visible at flowering time. Z4–8
***C. dalmaticus*.** Late winter and early spring-flowering corm. Bears 1–3 rounded, purple-veined, pale violet flowers, with yellow centers, overlaid with silver or yellow outside. Z4–8
***C.* 'Dutch Yellow'.** See *C.* x *luteus* 'Golden Yellow'.
***C.* 'E.A. Bowles'** (illus. p.417). Early spring-flowering corm. Bears compact, scented, funnel-shaped, rich lemon yellow flowers, the outer petals with bronze-green bases and purple feathering. Increases well by offsets. Z4–8
***C. etruscus*.** Late winter and early spring-flowering corm. Bears 1 or 2 long-tubed, funnel-shaped, pale purple-blue flowers, washed silver outside, with violet veining. Z4–8. **'Zwanenburg'** (illus. p.417) has pale purple-blue flowers, washed with biscuit-brown and flecked violet outside.
***C.* 'Eyecatcher'** (illus. p.417). Late winter- to midspring-flowering corm. Funnel-shaped, gray-white, yellow-throated flowers are heavily marked deep purple outside. Z4–8
C. flavus, syn. *C. aureus*. Spring-flowering corm. Produces 1–4 fragrant, bright yellow or orange-yellow flowers; often several flowers are produced together or in quick succession. Z4–8
***C. gargaricus*.** Spring-flowering corm. Bears solitary, slender, bright orange-yellow flowers. Increases by stolons. Tolerates slightly damper conditions than most crocuses. Z4–8
***C.* 'Golden Yellow'**. See *C.* x *luteus* 'Golden Yellow'.
C. goulimyi (illus. p.417). Fall-flowering corm. Produces 1–3 rounded, long-tubed, scented, pale lilac to pinkish-lilac flowers, with a white throat and 3 inner petals usually paler than the 3 outer ones. Leaves and flowers are produced together. Needs a warm site. Z4–8
C. hadriaticus (illus. p.417). Fall-flowering corm. Leaves are produced with 1–3 white flowers, which usually have yellow throats and may be lilac-feathered at the base. Z4–8
***C. imperati*.** Strikingly bicolored, late winter or early spring-flowering corm. Bears 1 or 2 scented, long-tubed, purple flowers, fawn with purple striping outside and with yellow throats. Leaves are shiny and dark green. Z4–8. **'De Jager'** bears flowers rich violet-purple inside, biscuit-colored with violet feathering outside.
***C. iridiflorus*.** See *C. banaticus*.
C. korolkowii (Celandine crocus). Late winter and early spring-flowering corm. Has up to 20 narrow leaves and bears 3–5 fragrant, yellow flowers that are speckled or stained brown or purple outside. When open in sun, petals have glossy surfaces. Z4–8
C. kotschyanus, syn. *C. zonatus* (illus. p.417). Fall-flowering corm. Solitary, long-tubed, pinkish-lilac or purplish-blue flowers, with yellow centers and white anthers, are borne before the leaves. Each short-stemmed flower has a ring of yellow dots around the throat and creamy-white stamens. Z4–8. **var. *leucopharynx*** has pale lilac-blue flowers with white throats.
***C.* 'Ladykiller'.** Late winter- to midspring-flowering corm. Has funnel-shaped flowers, white or pale lilac within,

deep violet-purple with white margins outside. Z4–8
***C. laevigatus*.** Very variable corm, flowering intermittently for a month or more in fall or winter depending on the form. Fragrant flowers are borne with leaves and are usually lilac-purple with bold stripes on outside; inside each has a yellow eye and cream-white anthers. Z8–10
C. ligusticus, syn. *C. medius*. Fall-flowering corm. Has 1 or 2 funnel-shaped, uniform rich purple flowers, with yellow anthers and red stigmas cut into many threadlike branches. Leaves are produced in winter–spring, after flowering. Z5–9
***C. longiflorus*.** Fall-flowering corm. Produces 1 or 2, strongly fragrant, slender, purple flowers, which are striped darker purple outside, at the same time as leaves. Flowers have yellow centers and anthers and red stigmas. Z5–9
***C.* x *luteus* 'Golden Yellow'**, syn. *C.* 'Dutch Yellow', *C.* 'Golden Yellow'. Very vigorous, clump-forming, spring-flowering corm. Bears 2–5 orange-yellow flowers, faintly striped outside at bases. Naturalizes well in grass. Z5–9
***C. malyi*.** Spring-flowering corm with slightly gray-green leaves. Bears 1 or 2 funnel-shaped, white flowers with yellow throats, brown or purple tubes and showy, bright orange stigmas. Z5–9
***C. medius*.** See *C. ligusticus*.
***C. minimus*.** Late spring-flowering corm. Produces 1 or 2 long-tubed, mid- to deep lilac purple flowers. Outer petals are veined, stained or feathered with dark violet, often on a buff or yellow base. Z4–10
***C. niveus*.** Fall-flowering corm. Produces 1 or 2 flowers, varying from white to lilac with yellow throats, and with long, white, yellow, or purple-brown tubes. Conspicuous, orange styles are much-divided. Leaves emerge with flowers or just afterward. Needs a warm, sunny site. Z5–9
C. nudiflorus (Autumn crocus). Fall-flowering corm. Usually bears one slender, long-tubed, rich purple flower, with a frilly, bright orange or yellow stigma. Leaves are produced after the flowers. Naturalizes in grass. Z4–8
C. olivieri*.** Spring-flowering corm with spreading leaves. Produces 1–4, long-tubed, pale lemon yellow to deep orange flowers, with undivided styles. Z5–9. Flowers of **subsp. *balansae (syn. *C. balansae*) are stained or striped bronze-brown outside.
***C. pulchellus*.** Fall- to early-winter-flowering corm. Bears 1, rarely 2, long-tubed, goblet-shaped, pale lilac-blue flowers with darker veins, conspicuous, yellow throats and white anthers, before the leaves. Z5–9
***C. salzmannii*.** See *C. serotinus* subsp. *salzmannii*.
C. sativus, syn. *C.s.* var. *cashmirianus* (Saffron crocus). Fall-flowering corm. Dull green leaves are produced at the same time as 1–5, widely open, rich violet flowers, with dark purple veins. Each flower has 3 long, bright red stigmas that yield saffron. Z6–8
C. serotinus* subsp. *salzmannii, syn. *C. salzmannii*. Fall-flowering corm. Produces large, solitary, lilac-blue flowers, sometimes with yellow throats, as leaves are just starting to emerge. Z6–8
C. sieberi*.** Vigorous, late winter to early spring-flowering corm. Bears scented, rich pinkish-lilac to blue, yellow-throated flowers. Z4–8. **'Albus'** (syn. *C.s.* 'Bowles' White') illus. p.427. **subsp. *atticus has pale lilac to violet-blue flowers with frilly, orange stigmas. **'Bowles' White'** see *C.s.* 'Albus'. **'Firefly'** has abundant lilac flowers. **'Hubert Edelsten'** (illus p.417) has yellow-throated, pale lilac flowers, the outer segments of which are white, tipped, centrally marked and feathered with rich purple. **subsp. *sublimis* f. *tricolor*** (illus. p.417) has unusual flowers, divided into 3 distinct bands of lilac, white, and golden yellow.
***C.* 'Snow Bunting'** (illus. p.417). Spring-flowering corm. Fragrant, long-tubed, funnel-shaped, white flowers are lightly feathered gray-blue outside, with mustard-yellow centers and orange stigmas. Z4–8
C. speciosus (illus. p.417). Fall-flowering corm. Bears solitary, lilac-blue to deep purple-blue flowers, usually with a network of darker veins and a much-divided, orange stigma. Leaves emerge in winter-spring. Z4–8. **'Albus'** see *C.s.* f. *albus*. **f. *albus*** (syn. *C.s.* 'Albus') has pure white flowers. **'Conqueror'** (illus. p.417) has large, deep sky-blue flowers. **'Oxonian'** produces dark violet-blue flowers with prominent darker veining on the outside.
***C. susianus*.** See *C. angustifolius*.
C. tommasinianus*.** Late winter to spring-flowering corm. Bears 1 or 2 slender, long-tubed, funnel-shaped flowers, varying in color from lilac or purple to violet, sometimes with darker tips to petals and occasionally silver outside. Naturalizes well. Z4–8. **f. *albus has white flowers. **'Barr's Purple'** has purple flowers, silvery outside. **'Ruby Giant'** (illus. p.417) is clump-forming, bearing clusters of large rich reddish-purple flowers.**'Whitewell Purple'** increases rapidly, and has slender, reddish-purple flowers, silver-mauve inside.
***C. tournefortii*.** Late fall- to early winter-flowering corm. Leaves emerge at same time as 1 or 2 long-tubed, widely open, pale lilac-blue flower, each with a much-divided, orange stigma and white anthers. Remains open at night. Needs a sunny site. Z8–10
C. vernus (Dutch crocus, Spring crocus). Spring- to early summer-flowering corm. Produces solitary flowers in white, or shades of purple or lilac, often striped and feathered. Stigmas are large, frilly and orange or yellow. Suitable for naturalizing. Z3–8. **subsp. *albiflorus*** has small, white flowers, sometimes slightly marked or striped purple. **'Jeanne d'Arc'** produces white flowers with a deep purple base. **'Pickwick'** (illus. p.417) bears pale, grayish-white flowers, with dark violet stripes and purplish bases. **'Purpureus Grandiflorus'** has shiny, violet-purple flowers. **'Queen of the Blues'** (illus. p.417) has rich blue flowers that have higher margins and a darker base. **'Remembrance'** (illus. p.417) has shiny, violet flowers. **'Vanguard'**, a very early cultivar, produces bluish-lilac flowers, paler and silvered outside.
***C.* 'Zephyr'.** Fall-flowering corm. Bears solitary, long-tubed, very pale silver-blue flowers, veined darker, each with a conspicuous yellow throat and white anthers, before the leaves. Z5–8
***C. zonatus*.** See *C. kotschyanus*.
***C.* 'Zwanenburg Bronze'**, syn. *C. chrysanthus* 'Zwanenberg Bronze', (illus. p.417). Spring-flowering corm. Produces bicolored flowers, rich yellow inside, stained bronze outside. Z5–9

CROSSANDRA

ACANTHACEAE

Genus of evergreen shrubs and subshrubs, grown mainly for their flowers. Needs partial shade or full light and humus-rich, well-drained soil. Water potted plants freely when in full growth, moderately at other times. For a strong branch system, cut back flowered growth by at least half in late winter. Propagate by seed in spring or by greenwood cuttings in late spring or summer. Whitefly may be troublesome.
C. infundibuliformis, syn. *C. undulifolia*. Evergreen, erect to spreading, soft-stemmed shrub or subshrub. H to 3ft (1m), S 2ft (60cm). Has ovate to lance-shaped, glossy, deep green leaves and, in summer–fall or earlier, fan-shaped, salmon-red flowers in conical spikes, each 4in (10cm) long. Z12 (min. 59°F/15°C)
***C. nilotica*.** Evergreen, upright to spreading, leafy shrub. H 12–24in (30–60cm), S to 14in (35cm). Has ovate, pointed, rich green leaves. Small tubular, apricot to pale brick-red flowers with spreading petals are borne in short spikes from spring to fall. Z12 (min. 59°F/15°C)
***C. undulifolia*.** See *C. infundibuliformis*.

CROTALARIA

PAPILIONACEAE/LEGUMINOSAE

Genus of evergreen shrubs, perennials and annuals, grown mainly for their flowers. Requires full light and well-drained soil. Water containerized specimens freely when in full growth, less at other times. For a more compact habit, cut back old stems by half after flowering. Propagate by seed in spring or by semiripe cuttings in summer. Red spider mite may be troublesome.
C. agatiflora (Canary-bird bush) illus. p.459.

***Crucianella*.** See *Phuopsis*.

CRUSEA

RUBIACEAE

Genus of annuals and perennials grown for their showy flowers. Needs a position in semi- to full shade in moist but well-drained, humus-rich soil. Propagate by seed in spring, by division in spring or summer or by cuttings in summer.
C. coccinea illus. p.268.

CRYPTANTHUS

BROMELIACEAE

Genus of evergreen, rosette-forming perennials, grown for their attractive foliage. Needs semishade and well-drained soil, preferably mixed with sphagnum moss. Water moderately in the growing season, sparingly at other times. Propagate by offsets or suckers in late spring.
C. acaulis (Green earth star). Evergreen, clump-forming, basal-rosetted perennial. H to 4in (10cm), S 6–12in (15–30cm). Loose, flat rosettes of lance-shaped to narrowly triangular, wavy, mid-green leaves have serrated edges. Bears a cluster of fragrant, tubular, white flowers from rosette centers, usually in summer. Z12. (min. 68°F/20°C). **'Ruber'** has red-flushed foliage.
***C. bivittatus*.** Evergreen, clump-forming, basal-rosetted perennial. H to 6in (15cm), S 10–15in (25–38cm). Loose, flat rosettes of broadly lance-shaped, wavy, mid- to yellowish-green leaves have finely toothed margins and are striped lengthways with 2 coppery-fawn to buff bands. Small clusters of tubular, white flowers are produced from center of each rosette, usually in summer. Z12. (min. 68°F/20°C). **'Pink Starlite'** (illus. p.471), H 8in (20cm) or more, S 14in (35cm) or more, is spreading, with strap-shaped, green leaves striped yellowish-green, and heavily suffused deep pink.
C. bromelioides (Rainbow star). Evergreen, spreading, basal-rosetted perennial. H 8in (20cm) or more, S 14in (35cm) or more. Has dense rosettes of strap-shaped, wavy, finely toothed, arching, mid- to bright green leaves. Occasionally bears clusters of tubular, white flowers in center of each rosette, usually in summer. Z12. (min. 68°F/20°C). **'Tricolor'** has carmine-suffused, white-striped foliage.
***C. zonatus*.** Evergreen, basal-rosetted perennial. H 4–6in (10–15cm), S 12–16in (30–40cm). Forms loose, flat rosettes of strap-shaped, wavy, finely toothed, sepia-green leaves, cross-banded with gray-buff and with grayish-white scales beneath. A cluster of tubular, white flowers opens in each rosette, usually in summer. Z12. (min. 68°F/20°C). **'Zebrinus'** has silver-banded foliage.

CRYPTOCORYNE

ARACEAE

Genus of evergreen, marginal aquatic perennials, grown for their foliage. Suitable for tropical aquariums. Needs sun and rich soil. Remove fading foliage, and divide plants periodically. Propagate by division in spring or summer.
***C. spiralis*.** Semievergreen, perennial, submerged water plant. S 6in (15cm). Small, hooded, purplish spathes are borne intermittently among lance-shaped, purplish-green leaves. Z12 (min. 59°F/15°C)

CRYPTOGRAMMA

PTERIDACEAE

Genus of deciduous or semievergreen ferns. Needs partial shade and moist but well-drained, neutral or acidic soil. Remove fading fronds. Propagate by spores in late summer.
C. crispa (Parsley fern) illus. p.293.

CRYPTOMERIA

CUPRESSACEAE

See also CONIFERS.
C. japonica (Japanese cedar). Fast-growing, columnar to conical, open conifer. H 50–70ft (15–20m), S 15–25ft (5–8m). Has soft, fibrous, red-brown bark, needlelike, incurved, mid- to dark green leaves, spirally arranged, and globular, brown cones. Z5–9. **'Bandai-sugi'**, H and S 6ft

(2m), is an irregularly rounded shrub; foliage that turns bronze in winter. **'Cristata'** illus. p.104. **'Elegans Compacta'**, H 6–15ft (2–5m), S 6ft (2m), is a dwarf form. **'Pyramidata'** illus. p.104. **'Sekkan-sugi'**, H 30ft (10m), S 10–12ft (3–4m), has semipendent branches and light golden-cream foliage. **'Spiralis'**, H and S 6–10ft (2–3m), forms a tree or dense shrub with spirally twisted foliage and is very slow-growing. **'Vilmoriniana'**, H and S 3ft (1m), forms a globular mound of yellow-green foliage that turns bronze in winter.

Cryptostemma calendulaceum. See *Arctotheca calendula*.

CTENANTHE

MARANTACEAE

Genus of evergreen, bushy perennials, grown for their ornamental foliage. Requires a humid atmosphere, even temperature and partial shade. Prefers moist but well-drained soil and soft water; do not allow to dry completely. Propagate by division in spring.

C. lubbersiana. Evergreen, clump-forming, bushy perennial. H and S to 30in (75cm) or more. Long-stalked, lance-shaped, sharply pointed leaves are 10in (25cm) long, green above, irregularly marked and striped with pale yellowish-green, and pale greenish-yellow below. Intermittently bears dense, one-sided spikes of small, 3-petaled, white flowers. Z11–12 (min. 55°F/13°C)

C. oppenheimiana, syn. *Calathea oppenheimiana*. Robust, evergreen, bushy perennial. H and S 3ft (1m) or more. Lance-shaped, leathery leaves are over 1ft (30cm) long, red below, dark green above with pale green or white bands along veins on either side of midribs. Dense, one-sided spikes of many small, 3-petaled, white flowers are borne intermittently. Z11–12. (min. 55°F/13°C). **'Tricolor'** illus. p.465.

Cudrania tricuspidata. See *Maclura tricuspidata*.

CUNNINGHAMIA

CUPRESSACEAE

See also CONIFERS.

C. lanceolata (Chinese fir) illus. p.100.

CUNONIA

CUNONIACEAE

Genus of evergreen, summer-flowering trees, grown for their foliage, flowers and overall appearance. Requires full light and well-drained soil. Water potted plants moderately, less in winter. Pruning is tolerated. Propagate by seed in spring or by semiripe cuttings in summer.

C. capensis (African red alder). Moderately fast-growing, evergreen, rounded tree. H and S 30–50ft (10–15m), more in rich soil. Has lustrous, dark green leaves, divided into pairs of lance-shaped, serrated leaflets. In late summer, tiny, long-stamened, white flowers are borne in dense, bottlebrushlike spikes, each 4–5in (10–13cm) long. Z10–11 (min. 41°F/5°C)

CUPHEA

LYTHRACEAE

Genus of annuals, short-lived, sometimes subshrubby perennials and evergreen shrubs, grown for their flowers. Prefers full sun and fertile, well-drained soil. Water freely when in full growth, moderately at other times. Remove flowered shoots after flowering to maintain a bushy habit. Propagate by seed in spring or greenwood cuttings in spring or summer. Susceptible to red spider mite.

C. cyanea illus. p.162.

***C.* 'Firecracker.** See *C.* x *purpurea* 'Firecracker'.

C. ignea, syn. *C. platycentra* (Cigar flower) illus. p.308.

C. platycentra. See *C. ignea*.

***C.* x *purpurea* 'Firecracker'** illus. p.306.

x *Cupressocyparis.* See x *Cuprocyparis*

CUPRESSUS

Cypress

CUPRESSACEAE

See also CONIFERS.

C. arizonica* var. *glabra, syn. *C. glabra* (Arizona cypress, Smooth cypress). Conical conifer. H 30–50ft (10–15m), S 10–15ft (3–5m). Has smooth, flaking, reddish-purple bark and upright, spirally arranged sprays of scalelike, aromatic, glaucous blue-gray leaves that are flecked with white resin. Globular cones are chocolate-brown. Z7–9

C. cashmeriana, syn. *C. torulosa* 'Cashmeriana' (Kashmir cypress) illus. p.95.

C. glabra. See *C. arizonica* var. *glabra*.

C. lawsoniana. See *Chamaecyparis lawsoniana*.

C. lusitanica (Cedar of Goa, Mexican cypress). Conical conifer. H 70ft (20m), S 15–25ft (5–8m). Has fissured bark and spreading, spirally arranged sprays of scalelike, aromatic, gray-green leaves. Bears small, globular cones that are glaucous blue when young, ripening to glossy brown. Z8–10

C. macrocarpa (Monterey cypress). Fast-growing, evergreen conifer, columnar when young, often wide-spreading with age. H 70ft (20m), S 20–80ft (6–25m). Bark is shallowly fissured. Scalelike, aromatic, bright to dark green leaves are borne in plumelike sprays. Globular cones are glossy and brown. Z8–10. **'Goldcrest'** illus. p.104.

C. pisifera. See *Chamaecyparis pisifera*.

***C. sempervirens* 'Stricta'** (Italian cypress), illus. p.102.

C. thyoides. See *Chamaecyparis thyoides*.

***C. torulosa* 'Cashmeriana'.** See *C. cashmeriana*.

x CUPROCYPARIS

SYN. x CUPRESSOCYPARIS

CUPRESSACEAE

① Contact with the foliage may aggravate skin allergies. See also CONIFERS.

x ***C. leylandii* 'Castlewellan'** illus. p.99.

'Haggerston Grey' illus. p.95.

'Harlequin' is a very fast-growing, columnar conifer with a conical tip. H 80–120ft (25–35m), S 12–15ft (4–5m). Gray-green foliage, with patches of clear ivory-white, is held in plumelike sprays.

'Leighton Green' bears flattened sprays of paired, scalelike, rich green leaves and globular, glossy, dark brown cones.

'Robinson's Gold', H 50–70ft (15–20m), has bright golden leaves. Z6–10

CURCUMA

Hidden ginger, Siam tulip

ZINGIBERACEAE

Genus of herbaceous perennials, grown for their patterned leaves and showy bracts on the flower spikes. The lower bracts form pouches from which flowers emerge, the upper bracts are without flowers, but larger and brightly colored or white. Grow in humus-rich, moist but well-drained soil in partial shade. Keep completely dry in winter. Propagate by division in spring.

C. cordata. See *C. zedoaria*.

C. petiolata (illus p.477). Herbaceous, clump-forming perennial. H 4ft (1.2m), S 20in (50cm). Narrowly ovate, strongly ribbed, mid-green leaves are to 2ft (60cm) long. In summer, bears a spike, to 14in (35cm) long, of lemon-yellow flowers and bright pink upper bracts. Z12

C. zedoaria, syn. *C. cordata* (illus. p.477). Herbaceous, clump-forming perennial. H 60in (1.5m), S 20in (50cm). Has ovate, ribbed, mid-green leaves, to 36in (90cm) long, with dark red stripes on upper sides. In mid- to late spring, bears a spike, 2–3in (5–8cm) long, of yellow flowers and pink to purple-red upper bracts. Z12

CURIO

ASTERACEAE/COMPOSITAE

Genus of succulent herbaceous perennials, often with creeping stems, grown for its interestingly shaped succulent leaves. Needs full sun or partial shade, well-drained soil, and good ventilation when grown under cover. Propagate by seed when ripe, or by stem cuttings in summer.

C. articulata, syn. *Baculellum articulatum*, *Kleinia articulata*, *Senecio articulatus* (Candle plant). Deciduous, spreading, perennial succulent. H 2ft (60cm), S indefinite. Branching, gray-marked, blue stems have weak joints. Bears rounded to ovate, 3–5-lobed, gray leaves and flattish heads of small, cup-shaped, yellow flowers from spring to fall. Offsets freely from stolons. Z10–11 (min. 50°F/10°C). **'Variegatus'** (syn. *S.a.* 'Variegatus') illus. p.486.

C. rowleyana, syn. *Senecio rowleyanus* (String-of-beads), illus. p.481.

Curtonus paniculatus. See *Crocosmia paniculata*.

CYANANTHUS

CAMPANULACEAE

Genus of late summer-flowering perennials, suitable for rock gardens, walls, and troughs. Needs partial shade and humus-rich, moist but well-drained soil. Propagate by softwood cuttings in spring or by seed in fall.

C. lobatus. Prostrate perennial. H ¾in (2cm), S 8in (20cm). Branched stems have small, wedge-shaped, dull green leaves. In late summer, each stem bears a funnel-shaped, blue flower. Z3–9. **f. *albus*** illus. p.359.

C. microphyllus illus. p.369.

CYANOTIS

COMMELINACEAE

Genus of evergreen, creeping perennials, grown for their foliage. Needs a position in sun or partial shade, with humus-rich, well-drained soil. Propagate by tip cuttings from spring to fall.

C. kewensis (Teddy-bear vine). Evergreen perennial forming rosettes with trailing stems. H 2in (5cm), S 12in (30cm). Clasping the stem are 2 rows of overlapping, ovate leaves, to 2in (5cm) long, dark green above, purple with velvety, brown hairs below. Stalkless clusters of 3-petaled, purplish-pink flowers are produced in axils of leaflike bracts almost all year round. Z11–12 (min. 50°F/10°C)

C. somaliensis (Pussy ears). Evergreen, creeping perennial. H 2in (5cm), S indefinite. Small, narrow, glossy, dark green leaves with white hairs surround stems. Has purplish-blue flowers in leaf axils in winter–spring. Z11–12 (min. 50°F/10°C)

CYATHEA

SYN. ALSOPHILA, SPHAEROPTERIS

CYATHEACEAE

Genus of evergreen tree ferns, grown for their foliage and overall appearance. Needs a humid atmosphere, sun or partial shade and humus-rich, moisture-retentive but well-drained soil. Water potted plants freely in summer, moderately at other times. Propagate by spores in spring.

C. australis, syn. *Alsophila australis* (Australian tree fern), illus. p.452.

***C. australis* of gardens.** See *C. cooperi*.

C. cooperi, syn. *Alsophila australis* of gardens, *C. australis* of gardens. H 6–15ft (2–5m), S 10–12ft (3–4m). Evergreen, fast-growing tree fern with a slender trunk and mid-green fronds, to 12ft (4m) long, divided into lance-shaped or linear leaflets; white-scaly frond stalks do not persist. Z8–11

C. medullaris (Black tree fern, Mamaku). Evergreen, upright tree fern with a slender, black trunk. H 22–50ft (7–16m), S 20–40ft (6–12m). Has arching fronds, each to 22ft (7m) long, divided into small, oblong, glossy, dark green leaflets, paler beneath. Z10–11

CYCAS

CYCADACEAE

Genus of slow-growing, evergreen, woody-stemmed palmlike cycads. Prefers a position in full light and humus-rich, well-drained soil. In frost-prone areas, grow in a temperate or warm greenhouse or as houseplants; in warmer climates, they are excellent specimen plants. Water containerized specimens moderately, less when not in full growth. Propagate in spring by seed or suckers taken from mature plants.

C. revoluta (Japanese sago palm) illus. p.457.

CYCLAMEN

PRIMULACEAE

Genus of tuberous perennials, some of which are occasionally evergreen, grown for their pendent flowers, each with 5 reflexed petals and a mouth often stained with a darker color. Grow in sun or partial shade, and in humus-rich, well-drained soil. If grown in containers, in summer dry off tubers of all except *C. purpurascens* (which is evergreen and flowers in summer); repot in fall and water to restart growth. Propagate by seed in late summer or fall. *C. persicum* and its cultivars are susceptible to black root rot. ⓘ All parts may cause severe discomfort if ingested.

C. africanum illus. p.424.

C. alpinum, syn. *C. trochopteranthum*. Spring-flowering, tuberous perennial. H 4in (10cm), S 2–4in (5–10cm). Bears rounded or heart-shaped leaves, zoned with silver. Produces musty-scented, pale carmine or white flowers, stained dark carmine at mouths; petals are twisted and propeller-shaped. Z7–10

C. caucasicum. See *C. coum* subsp. *caucasicum*.

C. cilicium illus. p.426.

C. coum illus. p.429. **subsp. *coum* f. *albissimum*** (syn. *C.c.* 'Album') illus. p.428. **subsp. *caucasicum*** (syn. *C. caucasicum*) is a winter-flowering, tuberous perennial. H to 4in (10cm), S 2–4in (5–10cm). Has heart-shaped, silver-patterned leaves and produces a succession of bright carmine flowers, each with a dark stain at the mouth. **subsp. *coum* f. *coum* Pewter Group** illus. p.429. **subsp. *coum* f. *coum* Pewter Group 'Maurice Dryden'** illus. p.428. Z8–10

C. creticum. Spring-flowering, tuberous perennial. H to 4in (10cm), S 2–4in (5–10cm). Produces heart-shaped, dark green leaves, sometimes silver-patterned, and fragrant, white flowers. Z7–9

C. cyprium. Fall-flowering, tuberous perennial. H to 4in (10cm), S 2–4in (5–10cm). Heart-shaped, toothed, dark green leaves, patterned with lighter green, are producd with or just after fragrant, white flowers with carmine marks around the mouth. Z9–11

C. europaeum. See *C. purpurascens*.

C. fatrense. See *C. purpurascens*.

C. graecum illus. p.425.

C. hederifolium, syn. *C. neapolitanum*, illus. p.426. **var. *hederifolium* f. *albiflorum*** illus. p.424.

C. libanoticum illus. p.418.

C. mirabile illus. p.425.

C. neapolitanum. See *C. hederifolium*.

C. persicum illus. p.429. **Halios Series** cultivars are winter to spring-flowering tuberous perennials. H 12in (30cm), S 7in (18cm). Blunt-toothed, heart-shaped, dark green leaves have silver marbling. Produce a succession of white, pink, scarlet, lilac or purple flowers. **Kaori Series**, H 4–8in (10–20cm), S 6–8in (15–20cm), have fragrant flowers, 1½in (4cm) long, in a wide range of colors in winter. **Latinia Success Mixed**, H 8–10in (20–25cm), S 6–8in (15–20cm), are compact and prolific, with white, rose-pink, salmon-pink, clear red, wine red or purple flowers. **Metis Series** cultivars, H 8–10in (20–25cm), S 6–8in (15–20cm), are vigorous, with fragrant flowers in a wide range of colors; leaves of **Metis Series Decora Mixed** are marked with silver; flowers of **Metis Series Pom Pom Mixed** have fringed edges. Shows good resistance to botrytis. **Super Serie** is a range of several separate series, with white, pink, red or purple flowers; **Super Serie Micro**, H and S to 6in (15cm), is a genetic dwarf; **Super Serie Da Vinci**, H and S to 12in (30cm), is summer-flowering. Z10–11 (min. 50°F/10°C)

C. pseudibericum. Spring-flowering, tuberous perennial. H to 4in (10cm), S 4–6in (10–15cm). Has heart-shaped, toothed leaves patterned with silvery- and dark green zones. Flowers are deep carmine-purple with darker, basal stains and white-rimmed mouths. Z8–10

C. purpurascens, syn. *C. europaeum, C. fatrense*, illus. p.422.

C. repandum. Spring-flowering, tuberous perennial. H to 4in (10cm), S 4–6in (10–15cm). Has heart-shaped, jagged-toothed, dark green leaves with lighter patterns. Bears fragrant, slender, reddish-purple flowers. Z8–10

C. rohlfsianum illus. p.426.

C. trochopteranthum. See *C. alpinum*.

Cyclobothra lutea. See *Calochortus barbatus*.

CYDONIA

ROSACEAE

Genus of one species of deciduous, spring-flowering tree or shrub, grown for its flowers and fruits, which are used as a flavouring and for preserves. Where marginally hardy, grow against a south- or west-facing wall. Requires sun and fertile, well-drained soil. Propagate species by seed in fall, cultivars by softwood cuttings in summer. Mildew, brown rot and fireblight are sometimes a problem.

C. oblonga (Common quince). **'Lusitanica'** is a deciduous, spreading tree. H and S 15ft (5m). Broadly ovate, dark green leaves are gray-felted beneath. Produces a profusion of large, 5-petaled, pale pink flowers in late spring, followed by fragrant, pear-shaped, deep yellow fruits. Z5–9. **'Vranja'** illus. p.88.

C. sinensis. See *Pseudocydonia sinensis*.

C. speciosa. See *Chaenomeles sinensis*.

CYLINDROPUNTIA

CACTACEAE

Genus of shrubby or treelike, many-branched cacti, closely related to *Opuntia*. Needs full sun and well-drained, gritty soil. Propagate by seed or root stem segments in spring or summer. ⓘ Not suitable as houseplants as contact with bristles may cause intense irritation to skin and are difficult to remove.

C. tunicata, syn. *Opuntia tunicata*, illus. p.496.

CYMBALARIA

PLANTAGINACEAE

Genus of usually short-lived, creeping or trailing perennials, grown for their tiny flowers borne on slender stems. Good for rock gardens, wall crevices and banks, but may be invasive. Needs shade and moist soil. Propagate by seed in fall. Self-seeds readily.

C. muralis (Ivy-leaved toadflax, Kenilworth ivy). Trailing perennial. H 2in (5cm), S 5in (12cm). Has small, ivy-shaped, long-stalked, finely hairy, pale green leaves. From late spring to fall, produces abundant, tiny, tubular, 2-lipped, spurred, pale purple flowers in the leaf axils; lower lip has a prominent orange blotch. Z3–7

CYMBIDIUM

ORCHIDACEAE

All require semishade in summer. ⓘ Contact with the foliage may aggravate skin allergies. See also ORCHIDS.

***C.* Caithness Ice gx** (illus. p.467). Evergreen, epiphytic orchid for a cool greenhouse. H 30in (75cm). Bears sprays of green flowers, 4in (10cm) across, each with a red-marked, white lip, in early spring. Has narrowly ovate leaves, to 2ft (60cm) long. Z11–12 (min. 50°F/10°C, max. 75°F/24°C)

***C.* Christmas Angel gx 'Cooksbridge Sunburst'.** Evergreen, epiphytic orchid for a cool greenhouse. H 30in (75cm). In winter, produces sprays of yellow flowers, 4in (10cm) across and with red-spotted lips. Narrowly ovate leaves are up to 2ft (60cm) long. Z11–12 (min. 50°F/10°C, max. 75°F/24°C)

***C. devonianum*.** Evergreen, epiphytic orchid for a cool greenhouse. H 2ft (60cm). In early summer, bears pendent spikes of olive-green flowers, 1in (25cm) across, overlaid with purple and with purple lips. Has broadly ovate, semi-rigid leaves, to 12in (30cm) long. Z11–12 (min. 50°F/10°C, max. 75°F/24°C)

C. elegans, syn. *Cyperorchis elegans* (illus. p.467). Evergreen, epiphytic orchid for a cool greenhouse. H 30in (75cm). Dense, pendent sprays of fragrant, tubular, yellow flowers, 1½in (4cm) across, are borne in early summer. Has narrowly ovate leaves, to 2ft (60cm) long. Z11–12 (min. 50°F/10°C, max. 75°F/24°C)

C. grandiflorum. See *C. hookerianum*.

C. hookerianum, syn. *C. grandiflorum*. Evergreen, epiphytic orchid for a cool greenhouse. H 30in (75cm). In winter, produces sprays of deep green flowers, 3in (8cm) across, each with a hairy, brown-spotted, creamy-white lip. Narrowly ovate leaves are up to 2ft (60cm) long. Z11–12 (min. 50°F/10°C, max. 75°F/24°C)

***C.* King's Loch gx 'Cooksbridge'.** Evergreen, epiphytic orchid for a cool greenhouse. H 2ft (60cm). Sprays of green flowers, 2in (5cm) across, and each with a purple-marked, white lip, open in spring. Leaves are narrowly ovate and up to 2ft (60cm) long. Z11–12 (min. 50°F/10°C, max. 75°F/24°C)

***C.* Pontac gx 'Mont Millais'.** Evergreen, epiphytic orchid for a cool greenhouse. H 30in (75cm). Produces sprays of rich, deep red flowers, 3in (8cm) across, edged and marked with white, in spring. Narrowly ovate leaves are up to 2ft (60cm) long. Z11–12 (min. 50°F/10°C, max. 75°F/24°C)

***C.* Portelet Bay gx** (illus. p.466). Evergreen, epiphytic orchid for a cool greenhouse. H 30in (75cm). Red-lipped, white flowers, 4in (10cm) across, are borne in sprays in spring. Has narrowly ovate leaves, to 2ft (60cm) long. Z11–12 (min. 50°F/10°C, max. 75°F/24°C)

***C.* Strathbraan gx.** Evergreen, epiphytic orchid for a cool greenhouse. H 2ft (60cm). In spring, produces slightly arching spikes of off-white flowers, 2in (5cm) across, with red marks on each lip. Leaves are narrowly ovate, to 2ft (60cm) long. Z11–12 (min. 50°F/10°C, max. 75°F/24°C)

***C.* Strathdon gx 'Cooksbridge Noel'.** Evergreen, epiphytic orchid for a cool greenhouse. H 3ft (1m). Sprays of rich pink flowers, 2in (5cm) across, with red-spotted, yellow-tinged lips, are borne in winter. Has narrowly ovate leaves, up to 2ft (60cm) long. Z9–11 (min. 50°F/10°C, max. 75°F/24°C)

***C.* Strathkanaid gx** (illus. p.467). Evergreen, epiphytic orchid for a cool greenhouse. H 2ft (60cm). In spring, bears arching spikes of deep red flowers, 2in (5cm) across. Lips are white, marked deep red. Narrowly ovate leaves are up to 2ft (60cm) long. Z9–11 (min. 50°F/10°C, max. 75°F/24°C)

***C. tracyanum*.** Evergreen, epiphytic orchid for a cool greenhouse. H 30in (75cm). In fall, bears long spikes of fragrant, olive-green flowers, 3in (8cm) across, overlaid with reddish dots and dashes. Has narrowly ovate leaves, to 2ft (60cm) long. Z11–12 (min. 50°F/10°C, max. 75°F/24°C)

CYNARA

ASTERACEAE/COMPOSITAE

Genus of architectural perennials, grown for their large heads of flowers. *C. cardunculus* is grown as a vegetable and as a decorative border plant. Needs sun and fertile, well-drained soil. Propagate by seed or division in spring.

C. cardunculus (Cardoon) illus. p.216.

CYNOGLOSSUM

Hound's tongue

BORAGINACEAE

Genus of annuals, biennials and perennials, grown for their forget-me-notlike flowers, which are borne over a long period from late spring to early fall. Needs sun and fertile but not over-rich soil. Propagate by division in spring or by seed in fall or spring.

***C. amabile* 'Firmament'** illus. p.315.

CYPELLA

IRIDACEAE

Genus of summer-flowering bulbs, grown for their short-lived, irislike flowers that have 3 large, spreading outer petals and 3 small, incurved inner ones. Need full sun and well-drained soil. Lift bulbs when dormant; partially dry off in winter. Propagate by seed in spring.

C. herbertii illus. p.412.

Cyperorchis elegans. See *Cymbidium elegans*.

CYPERUS

CYPERACEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.

C. albostriatus, syn. *C. diffusus* of gardens, *C. elegans* of gardens. Evergreen,

perennial sedge. H 2ft (60cm), S indefinite. Stem has prominently veined, mid-green leaves and up to 8 leaflike, green bracts surrounding a well-branched umbel of brown spikelets, produced in summer. Z11–12 (min. 50°F/10°C)
C. alternifolius of gardens. See *C. involucratus*.
C. diffusus of gardens. See *C. albostriatus*.
C. elegans of gardens. See *C. albostriatus*.
C. flabelliformis. See *C. involucratus*.
C. involucratus, syn. *C. alternifolius* of gardens, *C. flabelliformis*, illus. p.478.
C. isocladus of gardens. See *C. papyrus* 'Nanus'.
C. longus (Galingale). Deciduous, spreading, perennial sedge. H 5ft (1.5m), S indefinite. Bears rough-edged, glossy, dark green leaves and, in summer, attractive umbels of narrow, flattened, milk-chocolate-colored spikelets that keep their color well. Tolerates its roots in water. Z6–9
C. papyrus (Paper reed, Papyrus) illus. p.478. **'Nanus'** (syn. *C. isocladus* of gardens) is an evergreen, spreading, perennial sedge with a red rhizome; it is a dwarf variant of the species, sometimes considered distinct, and is often grown under misapplied names. H 32in (80cm), S indefinite. Triangular, leafless stems bear umbels of brown spikelets on 3–4in (8–10cm) stalks in summer. Z10–12 (min. 41–50°F/5–10°C)

Cyphomandra betacea. See *Solanum betaceum*.
Cyphomandra crassicaulis. See *Solanum betaceum*.

CYPHOSTEMMA

VITACEAE

Genus of prostrate or climbing, often deciduous, perennial succulents with very thick, fleshy, almost woody caudices and branches. Leaf undersides often exude droplets of resin. Needs full sun and very well-drained soil. Keep dry in winter. Difficult to grow. Propagate by seed in spring.
C. bainesii, syn. *Cissus bainesii*. Deciduous, perennial succulent. H and S 2ft (60cm). Has a thick, swollen, bottle-shaped trunk, often unbranched, covered in peeling, papery, yellow bark. Fleshy, silvery-green leaves, with deeply serrated edges, are divided into 3 leaflets, silver-haired when young. Bears tiny, cup-shaped, yellow-green flowers in summer, then grapelike, red fruits. Z11–12 (min. 50°F/10°C)
C. juttae, syn. *Cissus juttae*, illus. p.487.

CYPRIPEDIUM

Slipper orchid

ORCHIDACEAE

All do best in partial shade. See also ORCHIDS.
C. acaule (Moccasin flower). Deciduous, terrestrial orchid. H to 16in (40cm). Yellowish-green or purple flowers, 1½–2½in (4–6cm) long, each with a pouched, pink or white lip, are borne singly in spring–summer. Leaves are broadly lance-shaped, pleated and 4–12in (10–30cm) long. Z2–8
C. calceolus (Lady's slipper orchid, Yellow lady's slipper orchid). Deciduous, terrestrial orchid. H 30in (75cm). In spring–summer, bears paired or solitary yellow-pouched, purple flowers, 1¼–3in (3–7cm) long. Broadly lance-shaped leaves, 2–8in (5–20cm) long, are arranged in a spiral up stem. Stems and leaves are slightly hairy. Z2–8. **var. *pubescens*** see *C. pubescens*.
C. macranthon. See *C. macranthos*.
C. macranthos, syn. *C. macranthon*. Deciduous, terrestrial orchid. H 20in (50cm). Pouched, violet or purplish-red flowers, 1½–2½in (4–6cm) long, usually borne singly, open in spring–summer. Stems and leaves, 1½–3in (4–7cm) long, are slightly hairy. Z2–8
C. pubescens, syn. *C. calceolus* var. *pubescens*. Deciduous, terrestrial orchid. H 30in (75cm). Has large, purple-marked, greenish-yellow flowers, 3–4in (8–10cm) long, in spring–summer. Large, broadly lance-shaped leaves, 6–8in (15–20cm) long, are arranged in a spiral up stem. Stems and leaves are hairy. Z2–8
C. reginae (Showy lady's slipper orchid; illus. p.466). Deciduous, terrestrial orchid. H to 3ft (1m). In spring–summer, white flowers, ¾–2in (2–5cm) long, each with a pouched, white-streaked, pink lip, are borne singly or in groups of 2 or 3. Stem and leaves, 4–10in (10–25cm) long, are hairy. Z2–7
***C.* Ulla Silkens gx** illus. p.256.

CYRTANTHUS

AMARYLLIDACEAE

Genus of bulbs with brightly colored flowers, usually produced in summer. Requires full sun and free-draining, light soil. In frost-free areas may flower for much of the year. Plant in spring. Water freely in the growing season. Propagate by seed or offsets in spring.
C. brachyscyphus, syn. *C. parviflorus*, illus. p.423.
C. breviflorus, syn. *Anoiganthus breviflorus, A. luteus*. Clump-forming, summer-flowering bulb. H 8–12in (20–30cm), S 3–4in (8–10cm). Has narrowly strap-shaped, semierect, basal leaves. Leafless flower stem bears up to 6 funnel-shaped, yellow flowers, ¾–1¼in (2–3cm) long, at any time of year. Prefers a warm, sheltered situation. Z9–11
C. elatus, syn. *C. purpureus, Vallota speciosa*. Clump-forming, summer-flowering bulb. H 12–20in (30–50cm), S 5–6in (12–15cm). Has widely strap-shaped, semierect, basal, bright green leaves. Sturdy stem bears a head of up to 5 widely funnel-shaped, scarlet flowers, 3–4in (8–10cm) long. An excellent houseplant. Z10–11
C. mackenii illus. p.412. **subsp. *cooperi*** is a clump-forming, summer-flowering bulb. H 12–16in (30–40cm), S 3–4in (8–10cm). Has long, narrow, semierect, basal leaves. Leafless stems each bear a head of up to 10 fragrant, tubular, cream or yellow flowers, 2in (5cm) long and slightly curved. Z10–11
C. obliquus. Clump-forming, summer-flowering bulb. H 8–24in (20–60cm), S 5–6in (12–15cm). Has widely strap-shaped, semierect, basal, grayish-green leaves, twisted lengthways. Produces a head of up to 12 pendent, tubular, red-and-yellow flowers, slightly green-tinged, each 3in (7cm) long. Z10–11
C. parviflorus. See *C. brachyscyphus*.
C. purpureus. See *C. elatus*.
C. sanguineus. Clump-forming, summer-flowering bulb. H 12–20in (30–50cm), S 5–6in (12–15cm). Has strap-shaped, semierect, basal, bright green leaves. Sturdy stem bears 1 or 2 long-tubed, scarlet flowers, 3–4in (8–10cm) long. Z10–11

CYRTOMIUM

DRYOPTERIDACEAE

Genus of evergreen or deciduous ferns. Does best in semishade and humus-rich, moist soil. Remove fading fronds. Propagate by division in spring or summer or by spores in summer.
C. falcatum (Fishtail fern, Holly fern) illus. p.291.
C. fortunei, syn. *Phanerophlebia fortunei*. Evergreen fern. H 2ft (60cm), S 16in (40cm). Has erect, dull, pale green fronds, 12–24in (30–60cm) long, with broadly sickle-shaped pinnae, 1–2in (2.5–5cm) long. Z8–11

CYSTOPTERIS

WOODSIACEAE

Genus of deciduous ferns, suitable for rock gardens. Does best in semishade and in soil that is never allowed to dry out. Remove fronds as they fade. Propagate by division in spring, by spores in summer or by bulbils when available.
C. bulbifera (Berry bladder fern). Deciduous fern. H 6in (15cm), S 9in (23cm). Broadly lance-shaped, much-divided, dainty, pale green fronds produce tiny bulbils along their length. Propagate by bulbils as soon as mature. Z3–9
C. dickieana. Deciduous fern. H 6in (15cm), S 9in (23cm). Has broadly lance-shaped, divided, delicate, pale green fronds, with oblong, blunt, indented pinnae, that arch downward. Z3–9
C. fragilis (Brittle bladder fern). Deciduous fern. H 6in (15cm), S 9in (23cm). Broadly lance-shaped, pale green fronds are delicate and much divided into oblong, pointed, indented pinnae. Z3–9

CYTISUS

Broom

PAPILIONACEAE/LEGUMINOSAE

Genus of deciduous or evergreen shrubs, rarely small trees, grown for their profuse, pealike, sometimes fragrant, flowers, which are followed by narrow seed pods. Prefers full sun and fertile, but not over-rich, well-drained soil. Resents being transplanted. Propagate species by semiripe cuttings in summer or by seed in fall, hybrids and cultivars by semiripe cuttings in late summer. ⓘ All parts, especially the seeds, may cause mild stomach upset if ingested.
C. albus, syn. *Chamaecytisus albus*. Deciduous, spreading shrub. H 1ft (30cm), S 3ft (1m). Has leaves, each with 3 tiny leaflets and, from early to midsummer, dense clusters of creamy-white flowers. Z6–10
C. ardoinoi illus. p.372.
C. battandieri. See *Argyrocytisus battandieri*.
C.* x *beanii illus. p.335.
C.* x *boskoopii. Deciduous shrub. H and S 5ft (1.5m). Habit is more open than *C. praecox* and pink flowers are relatively small, but borne in great abundance in late spring and early summer. Z6–10.
'Boskoop Ruby' see *C.* 'Boskoop Ruby'.
'Hollandia' has lilac-pink standards and carmine-red wings. **'Windlesham Ruby'** see *C.* 'Windlesham Ruby'. **'Zeelandia'** (syn. *C.* 'Zeelandia'), is a wide, bushy shrub producing abundant, creamy-white and lilac-pink flowers.
***C.* 'Boskoop Ruby'**, syn. *C.* x *boskoopii* 'Boskoop Ruby'**.** Small, rounded shrub. H and S 4ft (1.2m). Has stiff, upright branches and very freely bears dark carmine-red flowers in late spring and early summer. Z6–10
C. canariensis of gardens. See *Genista spachiana*.
***C.* 'Firefly'.** Deciduous, bushy shrub with slender, arching shoots. H and S 5–6ft (1.5–2m). Small, mid-green leaves are oblong and have 3 tiny leaflets. Produces abundant, yellow flowers, marked with red, from late spring to early summer. Z6–10
C. hirsutus. See *Chamaecytisus hirsutus*.
C.* x *kewensis. Deciduous, arching shrub. H 1ft (30cm), S to 6ft (2m). Has leaves, each composed of 3 tiny leaflets, along downy stems. In late spring, bears creamy-white flowers. Good for a bank or large rock garden. Z6–10
***C.* 'Lena'.** Deciduous, compact shrub with a spherical habit. H and S 3ft (1m). Very small, mid-green leaves have 3 oblong leaflets. A profusion of bicolored red and yellow flowers are borne from late spring to early summer. Z6–10
C. nigricans, syn. *Lembotropis nigricans*, illus. p.160. **'Cyni'** is deciduous shrub with a neat, compact habit. H 5ft (1.5m), S to 3ft (1m). Dark green leaves are composed of 3 leaflets. In late summer, bears a profusion of yellow flowers in tall, slender spires. Z6–10
***C.* x *praecox* 'Allgold'** (Broom) illus. p.148. **'Warminster'** (Warminster broom) illus. p.148.
C. purpureus. See *Chamaecytisus purpureus*.
C. racemosus of gardens. See *Genista spachiana*.
C. scoparius (Common broom).
f. *andreanus* (Common broom) illus. p.162. **subsp. *maritimus***, syn. *C.s.* var. *prostratus*, is a deciduous, prostrate shrub forming dense mounds of interlocking shoots. H 8in (20cm), S 4–6ft (1.2–2m). Small, gray-green leaves usually have 3 oblong leaflets, but may be reduced to a single leaflet. Bears abundant, golden-yellow flowers in late spring and early summer. **var. *prostratus*** see *C.s.* subsp. *maritimus*. **'Windlesham Ruby'** see *C.* 'Windlesham Ruby'. Z7–9
***C.* 'Windlesham Ruby'**, syn. *C.* x *boskoopii* 'Windlesham Ruby', *C. scoparius* 'Windlesham Ruby'. Deciduous, bushy shrub with slender, arching shoots. H and S 5–6ft (1.5–2m). Small, mid-green leaves have 3 oblong leaflets. Large, rich red flowers are borne in profusion in late spring and early summer. Z6–9
***C.* 'Zeelandia'.** See *C.* x *boskoopii* 'Zeelandia'.

D

DABOECIA

ERICACEAE

Genus of two species of evergreen shrubs in the heather family (see also p.166). Elliptical leaves are dark green above, silver-gray beneath. The flowers are urn-shaped, usually pendent, borne in erect racemes. Grow in full sun, in lime-free soil. Propagate named cultivars by cuttings or layering.

D. azorica (Queiró, Azores heath). Compact shrub. H to 6in (15cm), S to 2ft (60cm). Flowers, borne in late spring and early summer in short racemes, are vivid red, pink or white. Z6–8. **'Arthur P. Dome'**, H 4–6in (10–15cm), S 12–18in (30–45cm), is slow-growing and prostrate, with ruby flowers.

D. cantabrica (St. Dabeoc's heath). Straggling shrub. H to 18in (45cm), S 2ft (60cm). Top growth may be damaged by frost and cold winds, but plants respond well to hard pruning and produce new growth from base. Leaves are lance-shaped to ovate. Bears purple, mauve pink or white flowers from late spring to midfall. Z6–8. **'Bicolor'** (illus. p.166) bears white, purple and striped flowers on the same plant. **f. *blumii* 'White Blum'** bears upward-pointing, white flowers. **'Charles Nelson'** is a sprawling shrub, with barrel-shaped, double, mauve flowers from early summer to midfall; the old corollas are not deciduous but remain on the plants. '**Hookstone Purple'**, S to 34in (85cm), is a robust, spreading shrub, bearing large, amethyst-purple flowers from late spring to late fall. **'Praegerae'**, H 14in (35cm), has glowing deep pink flowers. **'Romantic Muxoll'**, H 1ft (30cm), S 16in (40cm), is compact, with erect, double, rose-pink flowers; the old corollas are deciduous. **subsp. *scotica*** see *D.* x *scotica*. **'Snowdrift'** has bright green foliage and long racemes of large, white flowers. **'Waley's Red'** is a spreading shrub, with glowing magenta flowers in summer.

D.* x *scotica, syn. *D. cantabrica* subsp. *scotica*. Compact shrub. H to 6in (15cm), S to 2ft (60cm). Bears white, purple or red flowers from late spring to midfall. Z6–8. **'Jack Drake'**, H 8in (20cm), has small leaves and ruby-colored flowers. **'Katherine's Choice'**, H 8in (20cm), has mid-green foliage and bears cerise flowers in summer. **'Silverwells'** has small, bright green leaves and large, white flowers. **'William Buchanan'**, H 18in (45cm), is a vigorous cultivar with dark green leaves and deep purple flowers.

DACTYLORHIZA

ORCHIDACEAE

See also ORCHIDS.

D. elata, syn. *Orchis elata*. Deciduous, terrestrial orchid. H 3½ft (1.1m). Spikes of pink or purple flowers, ½–¾in (1–2cm) long, open in spring–summer. Lance-shaped leaves, 6–10in (15–25cm) long, are spotted with brownish-purple and arranged spirally on stem. Requires shade outdoors; keep potted plants semishaded in summer. Z6–8

D. foliosa, syn. *D. maderensis, Orchis maderensis*, illus. p.265.

***D. maderensis*.** See *D. foliosa*.

DAHLIA

ASTERACEAE/COMPOSITAE

Genus of bushy, summer- and fall-flowering, tuberous perennials, grown as bedding plants or for their flower heads, which are good for cutting or exhibition. Dwarf forms are used for mass-planting and are also suitable for containers. Needs a sunny position and well-drained soil. All apart from dwarf forms require staking. After flowering, lift tubers and store in a frost-free place; replant once all frost danger has passed. In frost-free areas, plants may be left in ground as normal herbaceous perennials, but they benefit from regular propagation to maintain vigour. Propagate dwarf forms by seed sown under glass in late winter, others in spring by seed, basal shoot cuttings or division of tubers. Dahlias may be subject to attack by aphids, red spider mite and thrips. In recent years, powdery mildew has become a problem in certain areas, and spraying is essential. Dahlias also succumb quickly to virus infection.
See also feature panel pp.396–98.

Border dahlias

Prolific and long-flowering, various species of *Dahlia* have been hybridized and, with constant breeding and selection, have developed into many forms displaying a wide color range (although there is no blue). Shoots may be stopped, or pinched out, to promote vigorous growth and a bushy shape. Spread measurements depend on the amount of stopping carried out and the time at which it is done: early stopping encourages a broader shape, stopping later in the growing season results in a taller plant with much less spread, even in the same cultivar. Leaves are generally mid-green and divided into ovate leaflets, some with rounded tips and some with toothed margins. Each flower head is referred to horticulturally as a flower, even though it does in fact comprise a large number of individual flowers. This horticultural usage has been followed in the descriptions below. All forms with flower heads to 6in (15cm) across are suitable for cutting; those suitable for exhibition are so noted.

Groups and flower sizes

Dahlias are divided into groups according to the size and type of their flower heads, although the latter may vary in color and shape depending on soil and weather conditions. The groups are: (1) Single-flowered; (2) Anemone-flowered; (3) Collerette; (4) Waterlily; (5) Decorative; (6) Ball; (7) Pompom; (8) Cactus; (9) Semicactus; (10) Miscellaneous; (11) Fimbriated; (12) Single orchid (Star); (13) Double orchid and Stellar; (14) Peony-flowered. For illustrations and descriptions see p.396.

The term Dwarf bedder can apply to any form of dahlia to 2ft (60cm) high. Lilliput dahlias are even smaller, to 1ft (30cm) high. The flowers may have single, semi-double or double flowers up to 1in (25cm) in diameter. For exhibition purposes certain groups may be subdivided; flower sizes are as follows:

Groups 4, 5, 8, 9, 11

A—giant-flowered; usually over 10in (25cm) in diameter. B—large-flowered; usually 8–10in (20–25cm) in diameter. C—medium-flowered; usually 6–8in (15–20cm) in diameter. D—small-flowered; usually 4–6in (10–15cm) in diameter. E—miniature-flowered; usually not exceeding 4in (10cm) in diameter.

Group 6

A—small ball dahlias; usually 4–6in (10–15cm) in diameter. B—miniature ball dahlias; usually 2–4in (5–10cm) in diameter.

Group 7

Pompom dahlias; not exceeding 2in (5cm) in diameter.

***D.* 'Akita'** (illus. p.398). Miscellaneous dahlia. H 4ft (1.2m), S 2ft (60cm). Produces dark crimson to red flowers, to 5in (13cm) across, with yellow centers, in summer–fall. The reverses of the petals are tipped white. Z9–11

***D.* 'Almand's Climax'.** Decorative dahlia. H 3½ft (1.1m), S 2ft (60cm). In summer–fall, bears pinkish-purple blooms streaked with white. Good for both exhibition and garden display. Z9–11

***D.* 'Alva's Doris'.** Small-flowered Cactus dahlia. H 4ft (1.2m), S 2ft (60cm). Free-flowering with blood-red blooms on strong stems in summer–fall. Good for exhibition. Z9–11

***D.* 'Alva's Supreme'** (illus. p.398). Giant-flowered Decorative dahlia. H 4ft (1.2m), S 2ft (60cm). Produces yellow flowers in summer–fall. Good for exhibition. Z9–11

***D.* 'Ann Breckenfelder'.** Collerette dahlia. H 3½ft (1.1m), S 2ft (60cm). In summer–fall, bears bright orange-red blooms with an inner collar of greenish-yellow florets. Good for both exhibition and garden display. Z9–11

***D.* 'Anniversary Ball'**, syn. *D.* 'Brookfield Enid'. Miniature Ball dahlia. H 3ft (1m), S 2ft (60cm). Produces lilac and pink flowers in summer–fall. Z9–11

***D.* 'Appetiser'.** Small-flowered Semicactus dahlia. H 4ft (1.2m), S 2ft (60cm). Produces yellow and pink flowers in summer–fall. Z9–11

***D.* 'Arabian Night'** (illus. p.397). Small-flowered Decorative dahlia. H 4ft (1.2m), S 1½ft (50cm). Has dark green leaves. Double, dark burgundy-red flowers are borne in summer–fall. Z9–11

***D.* 'Autumn Fairy'.** Miniature-flowered, Semicactus dahlia. H 16in (40cm), S 1ft (30cm). Soft orange flowers, with darker centers, are borne in summer–fall. Z9–11

***D.* 'Barry Williams'.** Medium-flowered Decorative dahlia. H 4ft (1.2m), S 2ft (60cm). Bears pink and yellow flowers in summer–fall. Z9–11

***D.* 'Bednall Beauty'.** Peony-flowered dahlia. H 4½ft (1.3m), S 2ft (60cm). Bears vivid red blooms in summer–fall. Z9–11

***D.* 'Berwick Wood'** (illus. p.397). Medium-flowered Decorative dahlia. H 4½ft (1.3m), S 2ft (60cm). In summer–fall, produces dark-centered, purple flowers on strong stems. Z9–11

***D.* 'Bishop of Auckland'** (illus. p.397). Single-flowered dahlia. H 32in (80cm), S 18in (45cm). Bears matte blackish-green leaves and single, open-centered, dusky-red flowers in summer–fall. Z9–11

***D.* 'Bishop of Llandaff'** (illus. p.398). Peony-flowered dahlia. H 3ft (1m), S 1½ft (45cm). Has bronze-green leaves and single, open-centered, dark red flowers, 3in (8cm) across, in summer–fall. Excellent as a bedding plant. Z9–11

***D.* 'Bishop of York'** (illus. p.398). Single-flowered dahlia. H 32in (80cm), S 18in (45cm). Produces dark purple leaves and single, open-centered, orange-blushed, golden flowers in summer–fall. Z9–11

***D.* 'Black Narcissus'** (illus. p.398). Medium-flowered Semicactus dahlia. H 5ft (1.5m), S 2ft (60cm). Bears intensely dark red blooms in summer–fall. Z9–11

***D.* 'Blyton Softer Gleam'.** Ball dahlia. H 4½ft (1.3m), S 2ft (60cm). Bears yellow blooms with soft orange tips in summer–fall. Good for both exhibition and garden display. Z9–11

***D.* 'Brian's Dream'** (illus. p.397). Miniature-flowered Decorative dahlia. H 3–4ft (1–1.2m), S 2ft (60cm). Produces creamy-white flowers, with petal tips suffused purplish-pink, in summer–fall. Z9–11

***D.* 'Brookfield Enid'.** See *D.* 'Anniversary Ball'.

***D.* 'Butterball'.** Miniature-flowered decorative dahlia. H 2ft (60cm), S 1ft (30cm). Produces bright yellow flowers in early summer. Z9–11

***D.* 'Café au Lait'** (illus. p.396). Giant-flowered Decorative dahlia. H 3ft (90cm), S 2ft (60cm). Cream flowers that merge into pale peach in the centers are borne in summer–fall. Z9–11

***D.* 'Cameo'.** Small-flowered Waterlily dahlia. H 30in (75cm), S 18in (45cm). Cream flowers with a yellow base are borne in summer–fall. Z9–11

***D.* 'Candy Cupid'.** Miniature Ball dahlia. H 3½ft (1.1m), S 2ft (60cm). In summer–fall, bears lavender-pink flowers that are good for exhibition. Z9–11

***D.* 'Carolina Moon'** (illus. p.397). Small-flowered Waterlily dahlia. H 4ft (1.2m), S 2ft (60cm). Lilac-edged, white flowers are produced in summer–fall. Z9–11

***D.* 'Charlie Dimmock'** (illus. p.398). Small-flowered Waterlily dahlia. H 5½ft (1.6m), S 2ft (60cm). Bears apricot flowers on a pale yellow ground, in summer–fall. Z9–11

***D.* 'Chat Noir'.** Medium-flowered Semicactus dahlia. H 3ft (1m), S 2ft (60cm). Produces deep reddish-black flowers in summer–fall. Z9–11

***D.* 'Cherokee Beauty'.** Giant-flowered Decorative dahlia. H 4½ft (1.3m), S 2–3ft (60–90cm). Bears pink flowers in summer–fall. Z9–11

***D.* 'Cherwell Skylark'.** Small-flowered Semicactus dahlia. H 3ft (1m), S 20–24in (50–60cm). Bears orange-flushed, salmon-pink blooms in summer–fall. Z9–11

***D.* 'Chimborazo'** (illus. p.398). Collerette dahlia. H 3½ft (1.1m), S 2ft (60cm). Leaves are glossy, dark green. Very free-

flowering. Each bloom is 6in (15cm) across, with dark maroon outer petals surrounding a greenish-yellow collar, touched red at the base, with a yellow central disc. Good for exhibition. Z9–11

***D.* 'Clair de Lune'.** Collerette dahlia. H 3½ft (1.1m), S 2ft (60cm). Each bloom is 5in (13cm) across, with an outer ring of clear yellow petals, a cream inner ring and center, and deep yellow anthers. Good for exhibition. Z9–11

D. coccinea (illus. p.397). Tuberous-rooted herbaceous perennial. H 6–10ft (2–3m), S 3–6ft (1–2m). From summer–late fall, produces sprays of single, yellow, orange-red, maroon or purple-red flowers, 2–3in (5–8cm) across. A parent of many garden dahlias. Z9–11

***D.* Coltness Hybrid.** Single-flowered dahlia. H and S 18in (45cm). Seed mix. Has deeply lobed leaves and daisylike, single flowers in many colors in summer–fall. Z9–11

***D.* 'Comet'** (illus. p.398). Anemone-flowered dahlia. H 3½ft (1.1m), S 2ft (60cm). Leaves are glossy, dark green. Dark red flowers, 4–6in (10–15cm) across, are produced in summer–fall. Z9–11

***D.* 'Cornel'** (illus. p.397). Small-flowered Ball dahlia. H 4ft (1.2m), S 2ft (60cm). Deep maroon-red flowers are produced in summer–fall. Z9–11

***D.* 'Cottesmore'.** Medium-flowered Waterlily dahlia. H 3½ft (1.1m), S 2ft (60cm). Produces purplish-pink flowers, with yellow shading at the petal bases, in summer–fall. Z9–11

***D.* 'Currant Cream'.** Small Ball dahlia. H 4ft (1.2m), S 2ft (60cm). Bears dark pink flowers, with pink-and-white petal bases, in summer–fall. Good for cutting. Z9–11

***D.* Dahlietta Series 'Surprise Kelly'** illus. p.326.

***D.* 'Dandy'** illus. p.327.

***D.* 'Davenport Sunlight'.** Medium-flowered Semicactus dahlia. H 4ft (1.2m), S 2ft (60cm). Has bright yellow flowers in summer–fall. Good for exhibition. Z9–11

***D.* 'Deborah's Kiwi'.** Small-flowered Cactus dahlia. H 3½ft (1.1m), S 2ft (60cm). Produces pink flowers, with white bases to the petals, in summer–fall. Z9–11

***D.* 'Demi Schneider'.** Collerette dahlia. H 5ft (1.5m), S 2ft (60cm). In summer–fall, bears single, red flowers, to 5½in (14cm) across, with yellow centers. Z9–11

***D.* 'Don Hill'.** Collerette dahlia. H 6ft (2m), S 2ft (60cm). In summer–fall, bears burgundy-red blooms with red collars flecked and tipped white. Z9–11

***D.* 'Downham Royal'.** Miniature-flowered Ball dahlia. H 4ft (1.2m), S 2ft (60cm). Produces deep claret-red flowers in summer–fall. Z9–11

***D.* 'East Anglian'.** Small-flowered Decorative dahlia. H 3ft (1m), S 2ft (60cm). Bears orange-yellow flowers in summer–fall. Z9–11

***D.* 'Easter Sunday'.** Collerette dahlia. H 3ft (1m), S 2ft (60cm). Leaves are glossy, dark green. Produces flowers 4in (10cm) across, with white, inner and outer petals, and dark yellow centers, in summer–fall. Good for exhibition. Z9–11

***D.* 'Ellen Huston'** (illus. p.398). Decorative, dwarf bedding dahlia. H 16in (40cm), S 18in (45cm). Has dark bronzed leaves and bears bright coral-red blooms, 3in (8cm) across, in summer–fall. Good for exhibition and garden display. Z9–11

***D.* 'Embrace'.** Small-flowered Cactus dahlia. H 3½ft (1.1m), S 2ft (60cm). Has pale orange flowers in summer–fall. Z9–11

***D.* 'Eveline'** (illus. p.396). Small-flowered Decorative dahlia. H 3ft (1m), S 2ft (60cm). White flowers, with a touch of purple at the centers and petal tips, are produced in summer–fall. Z9–11

***D.* 'Fascination'.** Dwarf Peony-flowered dahlia. H 2ft (60cm), S 18in (45cm). Bears loose, pale purple-pink blooms, 5in (13cm) across. Bronze foliage. Excellent for borders. Z9–11

***D.* 'Finchcocks'.** Waterlily dahlia. H 4ft (1.2m), S 2ft (60cm). Free-flowering, in shades of salmon-orange from summer–fall. Dark, divided foliage. Z9–11

***D.* 'Franz Kafka'** (illus. p.397). Pompom dahlia. H 32in (80cm), S 22in (55cm). Bears lilac flowers in summer–fall. Z9–11

***D.* 'Freya's Paso Doble'**, syn. *D.* 'Paso Doble'. Anemone-flowered dahlia. H 3½ft (1.1m), S 2ft (60cm). In summer–fall, has blooms with tubular, fringed, bright yellow central florets, surrounded by a flattened, outer ring of whitish-yellow petals. Z9–11

***D.* 'Fusion'.** Small-flowered Decorative dahlia. H 3ft (1m), S 2ft (60cm). In summer–fall, produces white flowers, the outer petals flushed pale pink, the inner petals veined purple-violet. Has bronze-tinged, dark green foliage. Z9–11

***D.* 'Gallery Art Deco'.** Miniature-flowered Decorative dahlia. H 12–18in (30–45cm), S 8in (20cm). Produces dark green leaves and bears double, red-centered, deep orange flowers, 4in (10cm) across, in summer–fall. Z9–11

***D.* 'Gallery Art Fair'** illus. p.298.

***D.* 'Gallery Art Nouveau'** (illus. p.397). Miniature-flowered Decorative dahlia. H 12–18in (30–45cm), S 8in (20cm). In summer–fall, produces double, pink and purple flowers, 4in (10cm) across, above dark green foliage. Z9–11

***D.* Gateshead Festival.** See *D.* 'Peach Melba'.

***D.* 'Gay Princess'.** Small-flowered Waterlily dahlia. H 4ft (1.2m), S 2ft (60cm). Produces lilac-lavender flowers in summer–fall. Z9–11

***D.* 'Geerling's Moonlight'.** Medium-flowered Semicactus dahlia. H 4½ft (1.3m), S 2ft (60cm). Produces brilliant yellow flowers in summer–fall. Z9–11

***D.* 'Geerlings Sorbet'**, syn. *D.* 'Sorbet' (illus. p.397). Medium-flowered Semicactus dahlia. H 4ft (1.2m), S 2ft (60cm). Produces white flowers, with dark purple-red tips, from midsummer to fall. Z9–11

***D.* 'Gerrie Hoek'** (illus. p.397). Small-flowered Waterlily dahlia. H 3ft (1m), S 2ft (60cm). Abundant, rose-pink flowers are borne on sturdy stems in summer–fall. Z9–11

***D.* 'Gilwood Terry G'.** Small-flowered Semicactus dahlia. H 4½ft (1.3m), S 3–4ft (1–1.2m). Flowers have bronze-tinted, orange outer petals and yellow inner petals, borne in summer–fall. Good for cutting. Z9–11

***D.* 'Giraffe'.** Double orchid dahlia. H 3ft (1m), S 2ft (60cm). In summer–fall, bears spotted, yellow-bronze flowers, to 3in (8cm) across. Good for cutting. Z9–11

***D.* 'Glorie van Heemstede'.** Small-flowered Waterlily dahlia. H 4½ft (1.35m), S 2ft (60cm). Clear yellow flowers are produced on sturdy stems in summer–fall. Z9–11

***D.* 'Grenadier'.** Small-flowered Decorative dahlia. H 3ft (1m), S 2ft (60cm). Bears bright orange-red blooms in summer–fall above dark bronze-green foliage. Z9–11

***D.* 'Grenidor Pastelle'.** Medium-flowered Semicactus dahlia. H 4½ft (1.3m), S 2ft (60cm). Bears salmon-pink flowers, with cream petal bases, in summer–fall. Good for exhibition. Z9–11

***D.* 'Gwyneth'.** Small-flowered Waterlily dahlia. H 6ft (1.8m), S 2ft (60cm). Bears bronze-tinted, orange flowers in summer–fall. Good for cutting. Z9–11

***D.* 'Hamari Accord'** (illus. p.398). Large-flowered Semicactus dahlia. H 4ft (1.2m), S 2ft (60cm). Has clear yellow flowers held on strong stems in summer–fall. Good for both exhibition and garden display. Z9–11

***D.* 'Hamari Bride'.** Semicactus dahlia. H 4ft (1.2m), S 2ft (60cm). Bears pure white blooms in summer–fall. Good for both exhibition and garden display. Z9–11

***D.* 'Hamari Gold'** illus. p.327.

***D.* 'Hamari Katrina'** (illus. p.398). Large-flowered Semicactus dahlia. H 4ft (1.2m), S 2ft (60cm). Produces deep butter-yellow flowers in summer–fall. Good for exhibition. Z9–11

***D.* 'Hamari Rosé'.** Ball dahlia. H 3½ft (1.1m), S 2ft (60cm). Has pale purplish-pink blooms in summer–fall. Z9–11

***D.* Happy Single First Love ('HS First Love')** (illus. p.398). Single-flowered dahlia. H 2ft (60cm), S 18in (45cm). Has dark purple leaves. Peach flowers, with a central red ring, are borne from midsummer to fall. Z9–11

***D.* Happy Single Juliet ('HS Juliet').** Single-flowered dahlia. H 2ft (60cm), S 18in (45cm). Produces fuchsia-pink flowers, in summer–fall, above dark purple leaves. Z9–11

***D.* Happy Single Kiss ('HS Kiss').** Single-flowered dahlia. H 2ft (60cm), S 18in (45cm). Flowers with salmon-pink petals that blend into yellow at the center, and a dark brown eye, are produced in summer–fall, above dark purple foliage. Z9–11

***D.* Happy Single Romeo ('HS Romeo')** illus. p.306.

***D.* Happy Single Wink ('HS Wink').** Single-flowered dahlia. H 2ft (60cm), S 18in (45cm). Produces lilac-pink flowers, each with a central, red ring around a dark eye, in summer–fall. Leaves are dark purple. Z9–11

***D.* 'Hayley Jayne'.** Small-flowered Semicactus dahlia. H 3½ft (1.1m), S 2ft (60cm). Produces flowers that are white at the base with purple-red tips, in summer–fall. Good for exhibition. Z9–11

***D.* 'Hexton Copper'** (illus. p.398). Small Ball dahlia. H 3½ft (1.1m), S 2ft (60cm). Bears orange flowers in summer–fall. Z9–11

***D.* 'Hillcrest Candy'.** Semicactus dahlia. H 4ft (1.2m), S 2ft (60cm). Bears blooms with bright pink outer florets and white inner florets. Good for exhibition and garden display. Z9–11

***D.* 'Hillcrest Jessica J'.** Large-flowered Cactus dahlia. H 4ft (1.2m), S 2ft (60cm). Bears red-purple flowers in summer and fall. Z9–11

***D.* 'Hillcrest Regal'.** Collerette dahlia. H 4ft (1.2m), S 2ft (60cm). Bears blooms with deep red-purple outer florets and a white collar, heavily overlaid deep red-purple. Z9–11

***D.* 'Hillcrest Royal'.** Medium-flowered Cactus dahlia. H 3½ft (1.1m), S 2ft (60cm). In summer–fall, rich purple flowers, with incurving petals, are borne on strong stems. Z9–11

***D.* 'Hillcrest Ultra'.** Small-flowered Decorative dahlia. H 4ft (1.2m), S 2ft (60cm). Produces flowers with pink outer petals and lemon-yellow inner petals, in summer–fall. Z9–11

***D.* 'Honka'.** Single orchid dahlia. H 3–4ft (1–1.2m), S 2ft (60cm). In summer–fall, bears abundant, star-shaped, bright yellow flowers, 2in (5cm) across, with darker yellow discs. Good for cutting. Z9–11

***D.* 'Hootenanny'.** See *D.* 'Hootenanny—Swan Island'.

***D.* 'Hootenanny—Swan Island'**, syn. *D.* 'Hootenanny' (illus. p.397). Collerette dahlia. H 4ft (1.2m), S 2ft (60cm). Bears striking blooms with dark reddish-magenta outer florets, and the collar magenta at base and pink at apex. Dark green foliage. Z9–11

***D.* 'HS First Love'.** See *D.* Happy Single First Love.

***D.* 'HS Juliet'.** See *D.* Happy Single Juliet.

***D.* 'HS Kiss'.** See *D.* Happy Single Kiss.

***D.* 'HS Romeo'.** See *D.* Happy Single Romeo.

***D.* 'HS Wink'.** See *D.* Happy Single Wink. ***D.* 'Jean Fairs'.** Waterlily dahlia. H 4½ft (1.3m), S 2ft (60cm). In summer–fall, produces semidouble, orange-yellow flowers, to 4in (10cm) across, the yellow outer petals strongly flushed orange, the inner petals orange-red. Z9–11

***D.* 'Jescot Julie'.** Double orchid-flowered dahlia. H 3ft (1m), S 18in (45cm). Bears burnt orange blooms, 4½in (11cm) across, purplish red on the reverse, in summer–fall. Z9–11

***D.* 'Jim Branigan'.** Large-flowered Semicactus dahlia. H 4½ft (1.3m), S 2ft (60cm). Bright red flowers are held well above the foliage in summer–fall. Good for exhibition. Z9–11

***D.* 'Jodie Wilkinson'.** Ball dahlia. H 4ft (1.2m), S 2ft (60cm). In summer–fall, bears pale apricot-orange blooms with a touch of lemon-yellow at the base of the florets. Z9–11

***D.* 'Jomanda'.** Ball dahlia. H 3½ft (1.1m), S 2ft (60cm). Bears clear terracotta-orange blooms in summer–fall. Good for both borders and exhibition. Z9–11

***D.* 'Josie Gott'.** Ball dahlia. H 3½ft (1.1m), S 2ft (60cm). Produces white blooms with lightly flushed lavender tips in summer–fall. Z9–11

***D.* 'Julie One'** illus. p.414.

***D.* 'Jura'** (illus. p.396). Small-flowered Semicactus dahlia. H 4ft (1.2m), S 2ft (60cm). In summer–fall, produces purple-tipped, white flowers. Z9–11

***D.* 'Karma Amanda'.** Small-flowered Decorative dahlia. H 34in (85cm), S 2ft (60cm). In summer–fall, bears white flowers with lilac petal tips and darker lilac coloring extending toward the base. Z9–11

***D.* 'Karma Choc'** (illus. p.398). Small-flowered Decorative dahlia. H 4ft (1.2m), S 2ft (60cm). Has black-green leaves and bears velvety, dark maroon flowers in summer–fall. Z9–11

***D.* 'Kathryn's Cupid'.** Miniature Ball dahlia. H 4ft (1.2m), S 2ft (60cm). In summer–fall, produces peach flowers that are good for exhibition. Z9–11

***D.* 'Kenora Sunset'.** Medium-flowered Semicactus dahlia. H 4ft (1.2m), S 2ft (60cm). Bears bicolored, brilliant red and yellow blooms in summer–fall. Z9–11

***D.* 'Kenora Superb'** (illus. p.398). Giant-flowered Semicactus dahlia. H 4ft (1.2m), S 2ft (60cm). Produces bright orange-and-yellow flowers in summer–fall. Z9–11

***D.* 'Kenora Valentine'.** Decorative dahlia. H 4ft (1.2m), S 2ft (60cm). Bears full-bodied, orange-red blooms, with yellow petal bases, in summer–fall. Z9–11

***D.* 'Kidd's Climax'.** Decorative dahlia. H 3½ft (1.1m), S 2ft (60cm). Bears gold-suffused pink blooms in summer–fall. Good for exhibition and garden display. Z9–11

***D.* 'Kilburn Rose'** (illus. p.397). Waterlily dahlia. H 4ft (1.2m), S 2ft (60cm). Bears pinkish-red blooms, with bright yellow tones at the petal base, in summer–fall. Good for exhibition and garden display. Z9–11

***D.* 'Klondike'**, syn. *D.* 'Klondyke'. Large-flowered Semicactus dahlia. H 4ft (1.2m), S 2ft (60cm). Produces white flowers in summer–fall. Z9–11

***D.* 'Klondyke'.** See *D.* 'Klondike'.

***D.* 'Knockout'**, syn. *D.* Mystic Knockout. Single-flowered dahlia. H 3ft (1m), S 2ft (60cm). In summer–fall, produces bright yellow blooms and dark purple-green, divided foliage. Very good for containers. Z9–11

***D.* 'Lilac Marston'.** Miniature-flowered decorative dahlia. H 4ft (1.2m), S 2ft (60cm). Bears warm lilac flowers in summer–fall. Z9–11

***D.* 'Lilac Time'.** Medium-flowered Decorative dahlia. H 4ft (1.2m), S 2ft (60cm). Produces white-edged, lilac flowers in summer–fall. Z9–11

***D.* 'Mabel Ann'.** Giant-flowered Decorative dahlia. H 3ft (1m), S 2ft (60cm). Apricot flowers, with pale yellow centers, are produced in summer–fall. Z9–11

***D.* 'Magenta Star'.** Single-flowered dahlia. H 5ft (1.5m), S 3ft (90cm). Bears long-lasting, bright magenta-purple blooms, in summer–fall, with dark, almost black, foliage that contrasts well with the flower heads. Z9–11

***D.* 'Marie Schnugg'.** Single orchid dahlia. H 3½ft (1.1m), S 2ft (60cm). In summer–fall, bears starlike, vivid red flowers, with a touch of magenta-purple at the margins. Good as a border plant as well as for cutting. Z9–11

***D.* 'Mark Hardwick'.** Giant-flowered Decorative dahlia. H 3½ft (1.1m), S 2ft (60cm). Compact plant bearing bright, deep yellow flowers, on strong stems, in summer–fall. Good for exhibition. Z9–11

***D.* 'Mary Richards'.** Small-flowered Decorative dahlia. H 4ft (1.2m), S 2ft (60cm). In summer–fall, bears white flowers strongly suffused lavender-pink. Z9–11

***D.* 'Mary's Jomanda'.** Ball dahlia. H 20in (50cm), S 2ft (60cm). Bears blooms with pale pink flower heads, overlaid with purplish tones. Excellent for both the garden and exhibition. Z9–11

D. merckii. Tuberous-rooted, herbaceous perennial. H to 6ft (2m), S 3ft (1m). Has many-branched stems and bears single, saucer-shaped, pink to purple or white flowers, to 3in (8cm) across, with purple or yellow disc florets, and often with arching flower stalks, in summer–late fall, either in racemes or singly from the leaf axils. Z9–11

***D.* 'Moonfire'.** Dwarf, Single-flowered dahlia. H 18in (45cm), S 1ft (30cm). Produces dark foliage before yellow-red flowers, 2–3in (5–7cm) across, are borne in summer–fall. Very good in a border and as a container plant. Z9–11

***D.* 'Moonglow'** (illus. p.398). Large-flowered Semicactus dahlia. H 3ft (1m), S 2ft (60cm). Pale creamy-yellow flowers are produced in summer–fall. Z9–11

***D.* 'Moor Place'.** Pompom dahlia. H 3ft (1m), S 2ft (60cm). Leaves are glossy, dark green. Has red-purple flowers in summer–fall. A good exhibition cultivar. Z9–11

***D.* Mystic Knockout.** See *D.* 'Knockout'.

***D.* 'Nargold'.** Medium-flowered Fimbriated dahlia. H 3ft (90cm), S 2ft (60cm). Produces rich orange flowers with fringed petals in summer–fall. Z9–11

***D.* 'Natal'** (illus. p.397). Pompom dahlia. H 3ft (90cm), S 2ft (60cm). Dark red flowers, paler on the reverse, are produced in summer–fall. Z9–11

***D.* 'Noreen'.** Pompom dahlia. H 3ft (1m), S 2ft (60cm). In summer–fall, bears dark pinkish-purple flowers. Good for exhibition. Z9–11

***D.* 'Onesta'.** Small-flowered Waterlily dahlia. H 4ft (1.2m), S 2ft (60cm). Produces abundant flowers with dark pink inner petals fading to pale pink outer petals, in summer–fall. Good for cutting. Z9–11

***D.* 'Onslow Renown'** (illus. p.398). Large-flowered Semicactus dahlia. H 4ft (1.2m), S 2ft (60cm). Bears yellowish-orange flowers in summer–fall. Z9–11

***D.* 'Otto's Thrill'** (illus. p.397). Large Decorative dahlia. H 4½ft (1.4m), S 2ft (60cm). Bears pink and yellow blooms in summer–fall. Z9–11

***D.* 'Park Princess'.** Small-flowered Cactus dahlia. H 2ft (60cm), S 18in (45cm). Pink flowers are borne in profusion in summer–fall. Z9–11

***D.* 'Paso Doble'.** See *D.* 'Freya's Paso Doble'.

***D.* 'Peach Melba'**, syn. *D.* Gateshead Festival. Small-flowered Decorative dahlia. H 4ft (1.2m), S 2ft (60cm). In summer–fall, bears peach to orange flowers with lemon-yellow petal bases. Good for exhibition. Z9–11

***D.* 'Pearl of Heemstede'.** Small-flowered Waterlily dahlia. H 3ft (1m), S 18in (45cm). Produces pale silvery-pink flowers on long, thin stems in summer–fall. Extremely free-flowering. Z9–11

***D.* 'Pink Giraffe'.** Double orchid dahlia. H 4½ft (1.3m), S 2ft (60cm). In summer–fall, produces distinctive, pale pink blooms, with broad, horizontal stripes of shocking pink across the florets. Z9–11

***D.* 'Pink Jupiter'.** Giant-flowered Semicactus dahlia. H 4½ft (1.3m), S 2ft (60cm). In summer–fall, bears deep pinkish-mauve flowers. Good for exhibition. Z9–11

***D.* 'Pink Shirley Alliance'.** Small-flowered Cactus dahlia. H 4ft (1.2m), S 2ft (60cm). Has soft lilac-pink flowers in summer–fall. Z9–11

***D.* 'Pontiac'.** Small-flowered Cactus dahlia. H 3ft (1m), S 2ft (60cm). Leaves are glossy, dark green. Bears dark pinkish-purple flowers in summer–fall. Z9–11

***D.* 'Pooh'.** See 'Pooh—Swan Island'.

***D.* 'Pooh—Swan Island'**, syn. *D.* 'Pooh'. Collerette dahlia. H 3ft (1m), S 2ft (60cm). Produces yellow-tipped, scarlet flowers, with central, yellow collars, in summer–fall. Z9–11

***D.* 'Preston Park'** (illus. p.398). Dwarf Single-flowered dahlia. H 18in (45cm), S 1ft (30cm). Bedding plant with nearly black foliage. In summer–fall, short stems bear bright scarlet flowers, to 3in (8cm) across, with prominent yellow anthers. Z9–11

***D.* 'Rhonda'.** Pompom dahlia. H 3ft (1m), S 2ft (60cm). Bears whitish-lilac flowers in summer–fall. Good for exhibition. Z9–11

***D.* 'Rip City'.** Small-flowered Semicactus dahlia. H 3ft (1m), S 2ft (60cm). Produces maroon flowers, with darker maroon-black centers, from summer–fall. Z9–11

***D.* 'Roxy'** (illus. p.397). Single-flowered dahlia. H 18in (45cm), S 16in (40cm). Bedding plant with magenta-purple flowers, borne summer–fall, and dark green-black leaves. Z9–11

***D.* 'Ruskin Charlotte'** (illus. p.397). Large-flowered Semicactus dahlia. H 3ft (1m), S 2ft (60cm). Lavender-pink flowers, with white bases, are produced summer–fall. Z9–11

***D.* 'Ryecroft Gem'** (illus. p.397). Miniature-flowered Decorative dahlia. H 3ft (90cm), S 2ft (60cm). In summer–fall, bears violet-margined, lavender-pink flowers. Good for exhibition. Z9–11

***D.* 'Ryecroft Jan'.** Ball dahlia. H 3½ft (1.1m), S 2ft (60cm). Has neat white blooms in summer–fall. Good for both garden display and exhibition. Z9–11

***D.* 'Sascha'** (illus. p.397). Small-flowered Waterlily dahlia. H 6ft (1.8m), S 2ft (60cm). In summer–fall, bears bright purple-pink flowers, fading to paler purple-pink toward the margins. Z9–11

***D.* 'Shandy'.** Small-flowered Semicactus dahlia. H 3½ft (1.1m), S 2ft (60cm). Bears pale orange-brown flowers in summer–fall. Good for exhibition. Z9–11

***D.* 'Shirley Alliance'.** Small-flowered Cactus dahlia. H 4½ft (1.3m), S 2ft (60cm). In summer–fall, bears soft orange flowers with a gold base to each petal. Good for exhibition. Z9–11

***D.* 'Sir Alf Ramsey'.** Giant-flowered Decorative dahlia. H 3½ft (1.1m), S 2ft (60cm). In summer–fall, bears lavender-pink flowers, with white petal bases. Z9–11

***D.* 'Small World'** (illus. p.396). Pompom dahlia. H 3ft (1m), S 2ft (60cm). Leaves are glossy, dark green. Has white flowers in summer–fall. Suitable for exhibition. Z9–11

***D.* 'So Dainty'** (illus. p.398). Miniature-flowered Semicactus dahlia. H 3½ft (1.1m), S 2ft (60cm). Produces bronze-colored flowers in summer–fall that are suitable for exhibition. Z9–11

***D.* 'Sorbet'.** See *D.* 'Geerlings Sorbet'.

***D.* 'Swanvale'.** Small-flowered Decorative dahlia. H 3½ft (1.1m), S 2ft (60cm). Produces yellow flowers in summer–fall. Z9–11

***D.* 'Tally Ho'.** Single-flowered dahlia. H 4ft (1.2m), S 2ft (60cm). Bears bright orange-red blooms in summer–fall, and dark bronze-green foliage. Z9–11

***D.* 'Trelyn Kiwi'** (illus. p.396). Small-flowered Semicactus dahlia. H 4ft (1.2m), S 2ft (60cm). Produces pink-flushed, white flowers, with darker pink central petals, in summer–fall. Z9–11

***D.* 'Trengrove Millennium'** (illus. p.398). Medium-flowered Decorative dahlia. H 4ft (1.2m), S 2ft (60cm). Bears yellow flowers in summer–fall. Suitable for exhibition. Z9–11

***D.* 'Twyning's After Eight'.** Single-flowered dahlia. H 3ft (90cm), S 2ft (60cm). Bears white blooms, with a touch of greenish-yellow at the base of florets, in summer–fall. Has dark, almost black foliage. Z9–11

***D.* 'Vicky Crutchfield'.** Small-flowered Waterlily dahlia. H 3ft (1m), S 2ft (60cm). Bears pink flowers in summer–fall. Suitable for exhibition. Z9–11

***D.* 'Waltzing Mathilda'.** Miscellaneous group dahlia. H 28in (70cm), S 2ft (60cm). In summer–fall, bears loose flowers, in shades of red and orange, and petals fold inward from the midrib. Has green foliage, touched bronze, and dark purple stems. Z9–11

***D.* 'Wanda's Capella'.** Giant-flowered Decorative dahlia. H 4ft (1.2m), S 2ft (60cm). Has bright yellow flowers in summer–fall. Suitable for exhibition. Z9–11

***D.* 'Westerton Folly'.** Ball dahlia. H 4ft (1.2m), S 2ft (60cm). Purplish-pink blooms are borne in summer–fall. Z9–11

***D.* 'Weston Pirate'.** Miniature-flowered Cactus dahlia. H 4½ft (1.3m), S 20–24in (50–60cm). Produces prolific, semidouble, dark red flowers, in summer–fall. Good for cutting. Z9–11

***D.* 'Weston Spanish Dancer'.** Miniature-flowered Cactus dahlia. H 3ft (1m), S 2ft (60cm). Bright scarlet flowers, with yellow bases, are produced summer–fall. Good for exhibition. Z9–11

***D.* 'White Alva's** (illus. p.396). Giant-flowered Decorative dahlia. H 4ft (1.2m), S 2ft (60cm). Produces pure white flowers, held well above the foliage on strong stems, in summer–fall. Good for exhibition. Z9–11

***D.* 'White Ballet'** (illus. p.396). Small-flowered Waterlily dahlia. H 3ft (1m), S 2ft (60cm). Bears pure white flowers in summer–fall. Z9–11

***D.* 'White Klankstad'** (illus. p.396). Small-flowered Cactus dahlia. H 3½–4ft (1.1–1.2m), S 2ft (60cm). A sport of *D.* 'Klankstad Kerkrade' with white flowers in summer–fall. Z9–11

***D.* 'White Moonlight'** (illus. p.396). Medium-flowered Semicactus dahlia. H 4ft (1.2m), S 2ft (60cm). White flowers are borne on sturdy stems in summer–fall. Z9–11

***D.* 'Wootton Cupid'** (illus. p.397). Miniature Ball dahlia. H 3½–4ft (1.1–1.2m), S 2ft (60cm). Produces sugar-pink flowers during summer–fall. Good for exhibition. Z9–11

***D.* 'Wootton Impact'** (illus. p.398). Medium-flowered Semicactus dahlia. H 4ft (1.2m), S 2ft (60cm). In summer–fall, produces flowers in shades of bronze, held well above the foliage on strong stems. Good for exhibition. Z9–11

***D.* 'Yellow Hammer'** (illus. p.398). Dwarf, Single-flowered dahlia. H 18in (45cm), S 1ft (30cm). Bears rich yellow flowers, 3in (8cm) across, in summer–fall. Z9–11
***D.* 'Yelno Enchanted'.** See *D.* 'Yelno Enchantment'.
***D.* 'Yelno Enchantment'**, syn. *D.* 'Yelno Enchanted'. Small-flowered Waterlily dahlia. H 4ft (1.2m), S 2ft (60cm). Bears pale pink flowers in summer–fall. Good for cutting. Z9–11
***D.* 'Yelno Firelight'.** Small-flowered Waterlily dahlia. H 4ft (1.2m), S 2ft (60cm). In summer–fall, bears red and yellow flowers, with a neat petal formation, held on strong stems. Z9–11
***D.* 'Zorro'** (illus. p.398). Giant-flowered Decorative dahlia. H 4ft (1.2m), S 2ft (60cm). Produces bright blood-red flowers in summer–fall. Good for exhibition. Z9–11

DAIS

THYMELAEACEAE

Genus of deciduous or evergreen shrubs and trees grown for their flowers and overall appearance. Frost tender. Requires full sun and well-drained soil. Water containerized plants well when in growth, less when leafless. Propagate by seed in spring or by semiripe cuttings in summer.
***D. cotinifolia*.** Deciduous, bushy, neat shrub. H and S 6–10ft (2–3m). Has small, ovate to oblong, lustrous leaves. In summer, bears scented, star-shaped, rose-lilac flowers in flattened clusters, 3in (8cm) across. Bark yields fibers strong enough to be used as thread. Z10–11

***Daiswa*.** See *Paris*.

DANAE

ASPARAGACEAE

Genus of one species of evergreen, shrublike perennial, with inconspicuous flowers, grown for its attractive, flattened, leaflike shoots. Grow in sun or shade, and any moist soil. Propagate by seed in fall or by division from fall to spring.
D. racemosa (Alexandrian laurel). Evergreen, arching, dense shrub. H and S 3ft (1m). Has slender, green shoots and lance-shaped, tapering, leaflike, glossy, bright green stems, to 4in (10cm) long. In early summer, bears terminal racemes of small, greenish-yellow flowers, sometimes followed by spherical, red berries. Z6–9

DAPHNE

THYMELAEACEAE

Genus of evergreen, semievergreen or deciduous shrubs, grown for their usually fragrant, tubular flowers, each with 4 spreading lobes, and, in some species, for their foliage or fruits (seeds are poisonous). Dwarf species and cultivars are good for rock gardens. Most need full sun (although *D. alpina, D. arbuscula* and *D. blagayana* may be grown in semishade and *D. laureola* tolerates deep shade) and fertile, well-drained but not over-dry soil. Resents being transplanted. Propagate species by seed when fresh or by semiripe cuttings in summer, cultivars by cuttings only. Susceptible to viruses that cause leaf mottling. ⓘ All parts, including the seed, are highly toxic if ingested, and contact with the sap may irritate skin.
D. alpina illus. p.333.
D. arbuscula illus. p.351.
***D. bholua*.** Evergreen, occasionally deciduous, upright shrub. H 6–12ft (2–4m), S 5ft (1.5m). Has leathery, dark green leaves. In late winter, bears terminal clusters of richly fragrant, purplish-pink and white flowers, followed by fleshy, spherical, blackish-purple fruit. Z7–9.
'Jacqueline Postill' illus. p.143.
D. blagayana illus. p.333.
***D.* x *burkwoodii* 'Somerset'** illus. p.146. **'Somerset Variegated'** is a semievergreen, upright shrub. H 5ft (1.5m), S 3ft (1m). Bears dense clusters of fragrant, white-throated, pink flowers in late spring, sometimes again in fall. Narrowly oblong, gray-green leaves are edged with creamy-white or pale yellow. Z4–7
D. cneorum illus. p.333. **'Eximia'** is an evergreen, prostrate shrub. H 4in (10cm), S to 20in (50cm) or more. Has small, ovate, leathery, dark green leaves and, in late spring, terminal clusters of fragrant, white flowers, crimson outside and often pink-flushed within. Z5–9
***D. collina*.** Evergreen, domed, compact shrub. H and S 20in (50cm). Ovate, dark green leaves densely cover upright branches. Produces terminal clusters of small, fragrant, purple-rose flowers in late spring, followed by fleshy, spherical, orange-red fruit. Good for a rock garden or shrubbery. Z7–8
***D. genkwa*.** Deciduous, upright, open shrub. H and S 5ft (1.5m). Ovate, dark green leaves are bronze when young. Produces large, faintly scented, lilac flowers from mid- to late spring, followed by dry, ovoid, grayish-white fruit. Z6–9
***D. giraldii*.** Deciduous, upright shrub. H and S 2ft (60cm). Clusters of fragrant, golden-yellow flowers are produced amid oblong, pale blue-green leaves in late spring and early summer, and are followed by egg-shaped, red fruits. Z4–8
***D.* x *hendersonii* 'Blackthorn Rose'** illus. p.334.
D. jasminea illus. p.350.
D. laureola (Spurge laurel). Evergreen, bushy shrub. H 3ft (1m), S 5ft (1.5m). Has oblong, dark green leaves. Slightly fragrant, pale green flowers are borne from late winter to early spring, followed by spherical, black fruits. Z7–8. **subsp. *philippi*** illus. p.147.
D. mezereum (Mezereon; illus. p.142). Deciduous, upright shrub. H 4ft (1.2m), S 3ft (1m). Very fragrant, purple or pink blooms clothe the bare stems in late winter and early spring, followed by spherical, red fruits. Mature leaves are narrowly ovate and dull gray-green. Z5–8. **f. *alba*** bears very fragrant, white or creamy-white flowers and spherical, yellow fruits.
D.* x *napolitana, syn. *D. neapolitana*. Compact, densely branched, evergreen shrub. H and S 30in (75cm). Clusters of fragrant, rose-pink flowers are borne in spring, and again in flushes from summer to fall. Leaves are inversely lance-shaped to narrowly ovate and glossy dark green, grayish-green beneath. Z7–9
***D. neapolitana*.** See *D.* x *napolitana*.
***D. odora*.** Evergreen, bushy shrub. H and S 5ft (1.5m). Has ovate, leathery, glossy, dark green leaves. From midwinter to early spring, produces very fragrant, deep purplish-pink-and-white flowers, followed by spherical, fleshy, red fruit. Z7–9.
'Aureomarginata' illus. p.164.
***D. petraea* 'Grandiflora'** illus. p.351.
***D. retusa*.** See. *D. tangutica* Retusa Group.
***D.* x *rollsdorfii* 'Wilhelm Schacht'.** Vigorous, compact, bushy, evergreen shrub. H 18in (45cm), S 2ft (60cm). Bears oblong, glossy, dark green leaves and dense clusters of strongly fragrant, purple-pink flowers in spring and early summer, later flowers being paler. Tolerates dry conditions. Z6–10
***D. tangutica*.** Evergreen, bushy shrub with sturdy shoots. H and S 3ft (1m). Narrowly ovate, leathery leaves are dark green. Bears clusters of fragrant, white-flushed, purple-pink flowers in mid- to late spring, followed by spherical, fleshy, red fruit. Z7–9. **Retusa Group**, syn. *D. retusa*, illus. p.146.

DAPHNIPHYLLUM

DAPHNIPHYLLACEAE

Genus of evergreen trees and shrubs, grown for their habit and foliage. Male and female flowers are borne on separate plants. Needs a sheltered site in sun or semishade and deep, fertile, well- drained soil that is not too dry. Propagate by semiripe cuttings in summer.
***D. himalaense* subsp. *macropodum*.** See *D. macropodum*.
D. macropodum, syn. *D. himalaense* subsp. *macropodum*, illus. p.111.

DARMERA

SYN. PELTIPHYLLUM
Umbrella plant

SAXIFRAGACEAE

Genus of one species of perennial, grown for its unusual foliage, which emerges after the star-shaped, white to pink flowers. An attractive marginal water plant. Grows in sun or shade and requires moist soil. Propagate by division in spring or by seed in fall or spring.
D. peltata (Umbrella plant) illus. p.438.

DARWINIA

MYRTACEAE

Genus of evergreen, spring-flowering, heatherlike shrubs, grown for their flowers and overall appearance. Frost tender. Needs full light and moist, neutral to acidic soil, not rich in nitrogen. Water moderately when in full growth, sparingly at other times. Propagate by seed in spring or by semiripe cuttings in late summer. Difficult to root and to grow under glass.
***D. citriodora*.** Evergreen, rounded, well-branched shrub. H and S 2–4ft (60cm–1.2m). Oblong to broadly lance-shaped, blue-green leaves are lemon-scented when bruised. In spring, produces pendent, terminal heads of usually 4 small, tubular, yellow or red flowers, each surrounded by 2 red or yellowish bracts. Z9–11 (min. 41°F/5°C)

DASYLIRION

Bear grass

ASPARAGACEAE

Genus of yuccalike, evergreen shrubs, trees and perennial succulents grown for their foliage and flowers. Male and female flowers are produced on separate plants. Frost tender. Requires well-drained soil and a sunny position. Water freely when in full growth, sparingly at other times. Propagate by seed in spring.
***D. texanum*.** Evergreen, yuccalike perennial with a 30in (75cm) high trunk. H over 3ft (1m), S 10ft (3m). Has a rosette of narrow, drooping, green leaves, each 2–3ft (60–90cm) long, with yellowish prickles along margins. Stems, 15ft (5m) long, emerge from center of plant, bearing dense, narrow panicles of small, bell-shaped, whitish flowers in summer, followed by dry, 3-winged fruits in fall. Z9–11 (min. 41°F/5°C)

DAVALLIA

DAVALLIACEAE

Genus of mostly epiphytic ferns, suited to growing in pots and baskets. Needs semishade and fibrous, moist, peaty soil. Cut off fading fronds regularly. Propagate by division in spring or summer, or by spores in summer.
D. canariensis (Hare's-foot fern). Deciduous or semievergreen fern. H and S 1ft (30cm). Broadly lance-shaped, mid-green fronds, with triangular pinnae, arise from a scaly, brown rootstock. Z10–11 (min. 41°F/5°C)
D. mariesii (Squirrel's-foot fern). Deciduous fern. H 6in (15cm), S 9in (23cm). Broadly triangular, delicately divided, leathery, mid-green fronds arise from a creeping, scaly, brown rootstock. Z9–11

DAVIDIA

NYSSACEAE

Genus of one species of deciduous, spring- and summer-flowering tree, grown for its habit and showy, white bracts surrounding insignificant flowers. Needs shelter from strong winds. Requires sun or semishade and fertile, well-drained but moist soil. Propagate by semiripe cuttings in spring or by seed when ripe in fall.
D. involucrata (Dove tree, Ghost tree, Pocket handkerchief tree) illus. p.60. **var. *vilmoriniana*** is a deciduous, conical tree. H 50ft (15m), S 30ft (10m). Produces heart-shaped, almost hairless, glaucous leaves, pale green beneath. Pairs of large white bracts, surrounding small fowers, are borne on mature trees in late spring. Z6–8

DECAISNEA

LARDIZABALACEAE

Genus of deciduous, summer-flowering shrubs, grown for their foliage, flowers and sausage-shaped fruits. Requires a sheltered, sunny situation and fertile soil that is not too dry. Propagate by seed in fall.
D. fargesii (illus. p.142). Deciduous, semiarching, open shrub. H and S 20ft (6m).

Has blue-bloomed shoots and large, deep green leaves of paired leaflets. Racemes of greenish flowers in early summer are followed by pendent, sausage-shaped, bluish fruits. Z7–9

DECUMARIA

HYDRANGEACEAE

Genus of evergreen or deciduous, woody-stemmed, root climbers. Prefers sun and loamy, well-drained soil that does not dry out. Prune, if necessary, after flowering. Propagate by stem cuttings in late summer or early fall.

D. barbara. Deciduous climber. H to 30ft (10m). Has ovate to ovate-oblong, glossy, dark green leaves. In summer, produces rounded, terminal clusters, ⅝in (1.5cm) across, of small, white flowers each with a central "brush" of white or creamy-white stamens. Z6–9

D. sinensis illus. p.192.

DEINANTHE

HYDRANGEACEAE

Genus of slow-growing perennials with creeping, underground rootstocks. Useful for rock gardens and peat beds. Needs shaded, moist soil. Propagate by division in spring or by seed when fresh.

D. bifida illus. p.264.

D. caerulea. Slow-growing, mound-forming perennial. H 8in (20cm), S to 6in (15cm). Stems, each bearing a cluster of nodding, bowl-shaped, pale violet-blue flowers, rise above 3–4 ovate, toothed leaves in summer. Z5–9

Delairea odorata. See *Senecio mikanioides*.

DELOSPERMA

AIZOACEAE

Genus of evergreen or semievergreen, succulent shrubs and mat-forming, succulent perennials. Frost tender. Requires full sun and very well-drained soil. Propagate by seed or stem cuttings in spring or summer.

D. cooperi (Ice plant)**.** Spreading, mat-forming, perennial succulent. H 2in (5cm), S indefinite. Has cylindrical, fleshy, light green leaves, 2in (5cm) long, and, in mid- to late summer, solitary, daisylike, magenta flowers. Z8–10

DELPHINIUM

RANUNCULACEAE

Genus of perennials, biennials, and annuals, grown for their spikes of irregularly cup-shaped, sometimes hooded, spurred flowers. Needs an open, sunny position and fertile or rich, well-drained soil. Tall cultivars need staking and ample feeding and watering in spring and early summer. In spring, remove thin growths from well-established plants, leaving 5–7 strong shoots. If flower spikes are removed after they fade, a second flush may be produced in late summer, provided plants are fed and watered well. Propagate species by seed in fall or spring; Belladonna Group cultivars by division or basal cuttings of young shoots in spring; Elatum Group cultivars by cuttings only. ⓘ All parts may cause severe discomfort if ingested, and contact with foliage may irritate skin. See also feature panel p.217.

For ease of reference, delphinium cultivars have been grouped as follows:

Belladonna Group. Upright, branched perennials with palmately lobed leaves. H 3–4ft (1–1.2m), S to 18in (45cm). Wiry stems bear loose, branched spikes, 1ft (30cm) long, of elf cap-shaped, single flowers, ¾in (2cm) or more across, with spurs up to 1¼in (3cm) long, in early and late summer.

Elatum Group. Erect perennials with large, palmate leaves. H 5–6ft (1.5–2m), S 24–36in (60–90cm). In summer, produce closely packed spikes, 16in–4ft (40cm–1.2m) long, of regularly spaced, semidouble, rarely fully double flowers, 3–4in (8–10cm) across, in a range of colors from white to blue and purple, sometimes red-pink, usually with contrasting eyes.

Pacific Hybrids. Similar to Elatum Group cultivars, but grown as annuals or biennials. They produce spikes of short-lived, large, semidouble flowers in early and mid-summer.

University Hybrids. Erect, branched herbaceous perennials with palmately lobed, mid-green leaves. H 3–4ft (1–1.2m), S to 18in (45cm). In summer, stems bear loose, branched spikes of large, semi-double or double flowers in a range of colors in shades of red, orange or pink. Plants need careful cultivation to succeed.

***D.* 'Alice Artindale'** (illus. p.217). Elatum Group herbaceous perennial. H 5ft (1.5m). Produces neat, buttonlike, fully double, bicolor, rosy-mauve and sky-blue flowers, to 1¼in (3cm) across, in narrow spikes, 20–24in (50–60cm) or more long, in early to midsummer. Z3–7

***D.* 'Ann Woodfield'.** Elatum Group herbaceous perennial. H 5ft (1.5m). Bears semidouble, pale blue flowers, to 4in (10cm) across, suffused pale mauve, in tapering spikes, to 3ft (1m) long, in midsummer. Z3–8

***D.* 'Atlantis'.** Vigorous, Belladonna Group herbaceous perennial. H 4½ft (1.4m), S 20in (50cm). Produces spikes of mauve-flushed, deep blue flowers, 1¼in (3cm) across, in midsummer. Has dark green leaves. Z3–8

***D.* 'Blue Dawn'.** Elatum Group herbaceous perennial. H 8ft (2.4m). In midsummer, bears spikes, to 4ft (1.2m) long, of pale blue flowers, to 3in (7cm) across, with dark brown eyes. Z3–7

***D.* Blue Fountains Group.** Short-lived, Pacific Hybrids herbaceous perennial. H 5ft (1.5m). In early to midsummer, has variable, white-eyed, mid-blue flowers, to 3in (7cm) across, in spikes 2–3ft (70–100cm) long. Z3–8

***D.* 'Blue Lagoon'.** See *D.* 'Langdon's Blue Lagoon'.

***D.* 'Blue Nile'.** Elatum Group herbaceous perennial. H 5–6ft (1.5–1.8m). In midsummer, has rich blue flowers, 2½–3in (6–7cm) across, with lightly blue-streaked, white eyes, in spikes to 34in (85cm) long. Z3–8

***D.* 'Bruce'** (illus. p.217). Elatum Group herbaceous perennial. H 5½–7ft (1.7–2.2m). In midsummer, bears spikes, to 4ft (1.2m) long, of deep violet-purple flowers, to 3in (8cm) across, silver-flushed toward centers, and with dark brown eyes. Z3–7

D. brunonianum. Upright herbaceous perennial. H and S to 8in (20cm). Hairy stems bear rounded, 3- or 5-lobed leaves. In early summer, flower stems each bear a spike, to 6in (15cm) long, of hooded, single, pale blue to purple flowers, 1½in (4cm) across, with short, black spurs. Good for a rock garden. Z3–7

***D.* 'Butterball'.** Elatum Group herbaceous perennial. H 5–5½ft (1.5–1.7m). In midsummer, bears cream-eyed, white flowers, to 3in (8cm) across, overlaid with very pale greenish-yellow, in spikes to 20in (50cm) long. Z3–7

***D.* 'Can-can'** (illus. p.217). Elatum Group herbaceous perennial. H 6ft (2m). In midsummer, bears spikes, to 30in (75cm) long, of fully double flowers, to 3½in (9cm) across, the outer sepals margined dark blue, the inner sepals purple-mauve with darker veining. Z3–7

D. cardinale. Short-lived, upright herbaceous perennial. H 3–6ft (1–2m), S 2ft (60cm). In summer, bears spikes, 12–18in (30–45cm) long, of single, scarlet flowers, 1½in (4cm) across, with yellow eyes, above palmate, finely divided leaves. Z3–7

***D.* 'Centurion Sky Blue'.** Elatum Group herbaceous perennial. H to 5ft (1.5m). In summer, bears semidouble, sky-blue flowers, 2½in (6cm) across, with white eyes, in spikes to 2ft (60cm) long. Z3–7

***D.* 'Chelsea Star'.** Elatum Group herbaceous perennial. H 6ft (2m). Bears rich deep violet flowers, 2½–3in (6–8cm) across, with white eyes, in spikes to 3½ft (1.1m) long, in midsummer. Z3–7

***D.* 'Cherub'.** Elatum Group herbaceous perennial. H 7ft (2.2m). In midsummer, bears branching spikes, 2ft (60cm) long, of long-stalked, semidouble, mauve-pink flowers, with white eyes. Z3–7

D. chinense. See *D. grandiflorum*.

***D.* 'Claire'.** Elatum Group herbaceous perennial. H 4½ft (1.4m). In midsummer, semidouble, pale mauve-pink flowers, to 2in (5cm) across, with cream to pale brown eyes, are borne in spikes to 22in (55cm) long. Z3–8

***D.* 'Clifford Sky'.** Elatum Group herbaceous perennial. H 6ft (2m). In midsummer, bears semidouble, white-eyed, sky-blue flowers, to 3in (7.5cm) across, in spikes to 3ft (1m) long. Z3–8

***D.* 'Cliveden Beauty'** (illus. p.217). Belladonna Group herbaceous perennial. H 3–4ft (1–1.2m). In early to midsummer, bears spikes, 1ft (30cm) long, of sky-blue flowers, ¾–1¼in (2–3cm) across. Z3–7

D. consolida. See *Consolida ajacis*.

***D.* 'Conspicuous'.** Elatum Group herbaceous perennial. H 5ft (1.5m). In midsummer, produces semidouble, pale mauve and blue flowers, 2–2½in (5–6cm) across, with prominent dark eyes, in dense spikes, to 2ft (60cm) long. Z3–7

***D.* 'Crown Jewel'.** Elatum Group herbaceous perennial. H 5ft (1.5m). In summer, produces spikes, to 34in (85cm) long, of semidouble, pale blue and mauve flowers, to 2in (5cm) across, with deep brown eyes. Z3–8

***D.* 'Dunsden Green'.** Elatum Group herbaceous perennial. H 4½ft (1.3m). Spikes, 2ft (60cm) long, of semidouble, lime-green-suffused, white flowers, to 2in (5cm) across, with small, green eyes, are produced in midsummer. Z3–8

***D. elatum* 'Sweethearts'.** Sturdy, Elatum Group herbaceous perennial. H to 5ft (1.5m). In early to midsummer, bears spikes of semidouble, deep and pale rose-pink flowers, with white eyes. Z6–10

***D.* 'Elizabeth Cook'** (illus. p.217). Elatum Group herbaceous perennial. H 5–5½ft (1.5–1.7m), S 1½ft (45cm). In midsummer, bears white flowers, 2½in (6cm) across, in spires that gradually taper toward the tips. Z3–7

***D.* 'Emily Hawkins'.** Elatum Group herbaceous perennial. H 6–7ft (2–2.2m). Semidouble, purple-mauve flowers, to 2½in (6cm) across, with light yellowish-brown eyes are borne in midsummer in spikes to 32in (80cm) long. Z3–7

***D.* 'Fanfare'.** Elatum Group herbaceous perennial. H 6–7ft (2–2.2m). In midsummer, bears spikes, 2–2½ft (60–75cm) long, of pale blue to silvery-mauve flowers, 2½–3in (6–7cm) across, with white-and-violet eyes. Z3–7

***D.* 'Faust'.** Elatum Group herbaceous perennial. H to 6ft (1.8m). In summer, bears semidouble, deep cornflower-blue flowers, overlaid with purple, and with indigo eyes, to 3in (8cm) across, in spikes to 3ft (1m) long. Z610

***D.* 'Fenella'.** Elatum Group herbaceous perennial. H 3–5½ft (1–1.6m). In midsummer, bears spikes, to 3ft (1m) long, of purple-flushed, gentian-blue blooms, 2–2½in (5–6cm) across, with black eyes. Z3–7

***D.* 'Foxhill Nina'.** Elatum Group herbaceous perennial. H 4ft (1.2m). In midsummer, bears spikes, to 2ft (60cm) long, of semidouble, white-eyed, pale pink flowers, 2–2½in (5–6cm) across. Z3–7

***D.* 'Galileo'.** Elatum Group herbaceous perennial. H 6ft (1.8m). In early and mid-summer, bears tapering spikes, to 32in (80cm) long, of semidouble, violet-blue flowers, 3in (7cm) across, paling slightly toward the center, with brownish-black eyes. Z3–7

***D.* 'Gemini'.** Elatum Group herbaceous perennial. H 6ft (1.8m). In midsummer, bears spikes, to 34in (85cm) long, of semidouble, pale violet flowers, to 3in (7.5cm) across, edged reddish-violet with dark black-brown eyes, and white near the center. Z3–7

***D.* 'Gemma'.** Elatum Group herbaceous perennial. H 6ft (2m). Semidouble, pale lavender flowers, to 3in (7.5cm) across, with white eyes, are borne in midsummer in spikes to 3ft (1m) long. Z3–8

***D.* 'Gillian Dallas'** (illus. p.217). Elatum Group herbaceous perennial. H 6½ft (2.1m). In midsummer, bears spikes, to 3ft (90cm) long, of blue-violet flowers, to 3in (8cm) across, with white eyes and violet flecks. Z3–7

***D.* 'Giotto'.** Elatum Group herbaceous perennial. H 5½–6ft (1.7–2m). In midsummer, bears spikes, to 32in (80cm) long, of semidouble flowers, to 3in (7.5cm) across, with deep purple inner sepals, dark blue outer sepals, and light yellow-brown eyes. Z3–8

***D.* 'Gordon Forsyth'.** Elatum Group herbaceous perennial. H 6ft (2m). In midsummer, produces spikes, 24–28in (60–70cm) long, of semidouble, amethyst-purple blooms, 2½–3in (6–7cm) across, with violet-flecked, black eyes. Z3–7

D. grandiflorum, syn. *D. chinense*. **'Blue Butterfly'** (illus. p.217), H 1½ft (45cm), S 1ft (30cm), is a short-lived, erect

herbaceous perennial, usually grown as an annual. Has palmate, divided leaves. In summer, produces loose, branching spikes, to 6in (15cm) long, of single, deep blue flowers, 1½in (3.5cm) across. Useful as a bedding plant. Z3–8

***D.* 'Jill Curley'.** Vigorous Elatum Group herbaceous perennial. H to 6½ft (2.1m). Bears branching spikes, to 32in (80cm) long, of semidouble, white flowers, to 3in (8cm) across, with creamy-white eyes, in midsummer. Z6–10

***D.* 'Kennington Classic'.** Elatum Group herbaceous perennial. H 5ft (1.5m). In midsummer, bears spikes, to 3ft (90cm) long, of semidouble, rich cream flowers, to 3in (8cm) across, with well-formed, yellow eyes. Z3–7

***D.* 'Kestrel'** illus. p.218.

***D.* 'Langdon's Blue Lagoon'**, syn. *D.* 'Blue Lagoon'. Elatum Group herbaceous perennial. H 6ft (2m). In midsummer, bears tapering spikes, to 3ft (90cm) long, of semidouble, pale to mid-blue flowers, to 3in (7cm) across, paler toward the center, with blue-specked, white eyes. Z3–7

***D.* 'Langdon's Royal Flush'** (illus. p.217). Elatum Group herbaceous perennial. H 6ft (2m). In midsummer, bears spikes, to 34in (85cm) long, of semidouble, magenta-pink flowers, 2–2½in (5–6cm) across; upper petals are a darker shade than lower ones. Z3–7

***D.* 'Loch Leven'** (illus. p.217). Elatum Group herbaceous perennial. H to 5ft (1.5m). Bears spikes, 3ft (1m) long, of semidouble, mid-blue flowers, to 3in (7.5cm) across, with white eyes, in early to midsummer. Z3–7

***D.* 'Lord Butler'.** Elatum Group herbaceous perennial. H 5–5½ft (1.5–1.7m). Produces spikes, to 30in (75cm) long, of semidouble, mid-blue flowers, to 3in (7.5cm) across, lightly flushed with pale lilac and with blue-marked, white eyes. Z3–7

***D.* 'Lucia Sahin'** (illus. p.217). Elatum Group herbaceous perennial. H 6ft (2m). In midsummer, bears spikes to 3ft (90cm) long, of semidouble, deep purple-pink flowers, to 3in (7.5cm) across, with dark brown eyes. Z3–7

***D.* 'Margaret'.** Elatum Group herbaceous perennial. H to 4ft (1.2m). In summer, produces spikes, to 26in (65cm) long, of semidouble, bright purplish-blue flowers, 2½in (6cm) across, with white eyes, sometimes striped purplish-blue. Z6–10

***D.* 'Michael Ayres'** (illus. p.217). Elatum Group herbaceous perennial. H 6ft (1.8m). In early and mid-summer, bears spikes, to 32in (80cm) long, of semidouble, deep purple-blue flowers, to 2½in (6cm) across, with black-brown eyes. Z3–7

***D.* 'Mighty Atom'.** Elatum Group herbaceous perennial. H 5–6ft (1.5–2m). In midsummer, bears spikes, to 2½ft (75cm) long, of semidouble, mid-violet flowers, to 2½in (6cm) across, with violet-marked, yellowish-brown eyes. Z3–7

***D.* 'Min'** (illus. p.217). Elatum Group herbaceous perennial. H 5½–6ft (1.6–2m). In midsummer, bears tapering spikes, to 3ft (1m) long, of semidouble, pale lavender flowers, to 3¾in (9.5cm) across, with deep lavender suffusions and veining, as well as dark brown eyes. Z3–7

D. nudicaule illus. p.340.

***D.* 'Olive Poppleton'** (illus. p.217). Elatum Group herbaceous perennial. H 6–8ft (2–2.5m). In midsummer, bears spikes, to 3ft (1m) long, of off-white flowers, 2–2½in (5–6cm) across, sometimes faintly flushed pink and with fawn eyes. Z3–7

***D.* 'Our Deb'.** Elatum Group herbaceous perennial. H 6ft (1.8m). Semidouble flowers, 2½in (6cm) across, are silver-gray, lightly flushed red-purple, with light brown eyes, and are borne in tapering, branching spikes, to 3ft (90cm) long, in midsummer. Z6–10

***D.* 'Pink Ruffles'.** Elatum Group herbaceous perennial. H 5ft (1.5m). In midsummer, bears spikes, to 32in (80cm) long, of fully double, shell-pink flowers, to 3in (7.5cm) across. Z3–8

***D.* 'Red Caroline'** (illus. p.217). University Hybrids herbaceous perennial. H 3ft (1m), S 1ft (30cm). Has large, palmate, soft green, basal leaves and bears spikes of flattish, bright red flowers in summer. Z3–7

***D.* 'Rosemary Brock'.** Elatum Group herbaceous perennial. H to 5ft (1.5m). In early to midsummer, bears spikes, 30in (75cm) long, of semidouble, dusky purple-pink flowers with dark brown eyes. Z6–10

***D.* x *ruysii* 'Pink Sensation'** (Elatum Group delphinium and *D. nudicale*). University Hybrids herbaceous perennial. H 32–39in (80–100cm), S 16in (40cm). Has palmate, mid-green, basal leaves. In early summer, produces slender, loose-branched spikes of cup-shaped, slightly mauve-tinged, salmon-pink flowers. Z3–7

***D.* 'Sandpiper'** (illus. p.217). Elatum Group herbaceous perennial. H 3–4ft (1–1.5m). In midsummer, bears spikes to 2½ft (75cm) long, of semidouble, white flowers, to 2½in (6cm) across, with dark creamy-brown eyes. Z3–7

***D.* 'Spindrift'** (illus. p.217). Elatum Group herbaceous perennial. H 5½–6ft (1.7–2m). In early and mid-summer, bears spikes, to 3ft (1m) long, of semidouble, pinkish-purple flowers, 2–3in (5–7cm) across, overlaid with pale blue and with creamy-white eyes; toward the centers, the pinkish-purple pales and the blue darkens. Flower color varies according to soil type; on acidic soil, flowers are greenish. Z3–7

***D.* 'Strawberry Fair'.** Elatum Group herbaceous perennial. H 5½ft (1.7m). Bears spikes, to 31in (78cm) long, of semidouble, white-eyed, mulberry-pink flowers, 2–3in (5–7cm) across, in midsummer. Z3–7

***D.* 'Sungleam'** illus. p.219.

***D.* 'Sunkissed'.** Elatum Group herbaceous perennial. H 5½ft (1.7m). In midsummer, bears spikes, to 32in (80cm) long, of semidouble, cream flowers, to 2¾in (6.5cm) across, with canary-yellow eyes. Z3–8

***D. tatsienense*.** Short-lived, upright herbaceous perennial. H 1ft (30cm), S 2–4in (5–10cm). In summer, bears loose spikes, 6in (15cm) long, of single, small-spurred, bright blue flowers, 1in (25cm) long. Leaves are rounded to ovate and deeply cut. Suits a rock garden. Requires gritty soil. Z3–7

***D.* 'Tiddles'.** Elatum Group herbaceous perennial. H 6ft (1.8m). In midsummer, bears spikes, to 3ft (90cm) long, of semidouble to almost double, grayish-violet flowers, 2–2½in (5–6cm) across, with brown eyes. Z3–8

***D.* 'Tiger Eye'.** Elatum Group herbaceous perennial. H 5½ft (1.7m). In midsummer, bears spikes, 24–28in (60–70cm) long, of semidouble, light violet flowers, 2–2½in (5–6cm) across, with yellow-edged, brown eyes. Z3–7

***D.* 'Walton Gemstone'.** Elatum Group herbaceous perennial. H to 6ft (2m). In midsummer, bears blunt-tipped, branching spikes, to 34in (85cm) long, of closely spaced, long-stalked, semidouble, pale grayish violet flowers, 2½–3in (6–7cm) across, with white eyes. Z6–10

***Dendrathema*.** See *Chrysanthemum*.

***Dendrobenthamia capitata*.** See *Cornus capitata*.

DENDROBIUM

ORCHIDACEAE

See also ORCHIDS.

D. aphyllum, syn. *D. pierardii*. Deciduous, epiphytic orchid for an intermediate greenhouse. H to 2ft (60cm). In early spring, produces pairs of soft pink flowers, 1½in (4cm) across, each with a large, cream lip. Has ovate leaves, 2–3in (5–8cm) long. Needs semishade in summer. Best grown hanging from a bark slab. Z12–15

***D. chrysotoxum*.** Deciduous, epiphytic orchid for an intermediate greenhouse. H 2ft (60cm). Trusses of cup-shaped, deep yellow flowers, ¾in (2cm) across, and with hairy, red-marked lips, are produced in spring. Leaves are ovate and 2–3in (5–8cm) long. Provide good light in summer. Z14–15

D. infundibulum (illus. p.466). Evergreen, epiphytic orchid for a cool greenhouse. H 1ft (30cm). In spring, stems each produce up to 6 pure white flowers, 3in (8cm) across, and each with a yellow-marked lip. Has ovate leaves, 2–3in (5–8cm) long. Grow in semishade in summer. Z11–12

***D.* Momozono gx 'Princess'.** Evergreen, epiphytic orchid for an intermediate greenhouse. H 2ft (60cm), S 1ft (30cm). In spring, produces pairs of dark pink flowers, 3in (7cm) across, fading to white in the centers, and with white and pink marks on the lips. Oblong leaves are 4in (10cm) long. Requires semishade in summer. Z13–15

D. nobile (illus. p.466). Deciduous, epiphytic orchid (often evergreen in cultivation) for a cool greenhouse. H 1ft (30cm). Trusses of delicate, rose-pink flowers, 2in (5cm) across and each with a prominent maroon lip, are borne in spring. Ovate leaves are 2–3in (5–8cm) long. Requires semishade in summer. Z11–12

***D.* 'Oriental Paradise'.** Evergreen, epiphytic orchid. H 2ft (60cm). White flowers, 3in (7cm) across, with dark pink notches on the petals and yellow marks on the lips, are borne in pairs in spring. Oblong leaves are 4in (10cm) long. Requires semishade in summer. Z12–15

***D. pierardii*.** See *D. aphyllum*.

DENDROCHILUM

ORCHIDACEAE

See also ORCHIDS.

D. glumaceum (Silver chain). Evergreen, epiphytic orchid for a cool greenhouse. H 4in (10cm). Pendent sprays of fragrant, star-shaped, orange-lipped, creamy-white flowers, ½in (1cm) long, are produced in fall. Narrowly ovate leaves are 6in (15cm) long. Requires semishade in summer. Z11–12 (min. 50°F/10°C, max. 86°F/30°C)

DENDROMECON

PAPAVERACEAE

Genus of evergreen shrubs and small trees, grown for their foliage and showy flowers. Plant against a sunny wall in cold areas. Requires a position in full sun and very well-drained soil. Propagate by seed in fall or spring, by softwood cuttings in summer, or by root cuttings in winter.

D. rigida illus. p.206.

***Dentaria digitata*.** See *Cardamine pentaphylla*.

***Dentaria enneaphylla*.** See *Cardamine enneaphylla*.

***Dentaria pentaphylla*.** See *Cardamine pentaphylla*.

DESCHAMPSIA

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES and SEDGES.

D. cespitosa (Tufted hair grass). Evergreen, tuft-forming, perennial grass. H to 3ft (1m), S 10–12in (25–30cm). Has narrow, rough-edged, dark green leaves. In summer, produces dainty, open panicles of tiny, pale brown spikelets that last well into winter. Tolerates sun or shade. Z4–8.

'Golden Veil' see *D.c.* 'Goldschleier'.

'Goldschleier' (syn. *D.c.* 'Golden Veil'), H to 4ft (1.2m), S 2ft (60cm), has dark green leaves and produces spikelets that age to bright silvery yellow. **'Goldtau'** illus. p.289.

***D. flexuosa* 'Tatra Gold'** (Wavy hair grass). Evergreen, tuft-forming perennial grass. H 20in (50cm), S 1ft (30cm). Leaves are threadlike, smooth, and bright yellow-green. Bronze-tinted inflorescences are produced on wavy stalks in early and mid-summer. Prefers acidic soil. Z5–9

DESFONTAINIA

LOGANIACEAE/DESFONTAINIACEAE

Genus of one species of evergreen shrub, grown for its hollylike leaves and showy, tubular flowers. Provide shelter in cold areas. Needs shade, particularly in dry areas, and moist, peaty, preferably acidic soil. Propagate by semiripe cuttings in summer.

D. spinosa illus. p.203.

DESMODIUM

PAPILIONACEAE/LEGUMINOSAE

Genus of mostly deciduous shrubs, subshrubs and perennials grown for their small, pealike, white to purple flowers. Needs full sun and well-drained soil. Propagate by softwood cuttings in late spring, by seed in fall, or by division in spring.

D. elegans, syn. *D. tiliifolium*, illus. p.154.

***D. tiliifolium*.** See *D. elegans*.

DEUTZIA

HYDRANGEACEAE

Genus of mainly deciduous shrubs, grown for their profuse, often fragrant, 5-petaled flowers. Needs full sun and fertile, well-drained soil. Thin out old shoots after flowering. Propagate by softwood cuttings in summer.

***D. crenata* 'Pride of Rochester'.** Deciduous, upright shrub with arching shoots. H 10ft (3m), S 6ft (2m). In early and mid-summer, bears dense clusters of double, pink-tinged white flowers. Has peeling, pale brown bark when mature, and broadly ovate, rough-surfaced, dark green leaves. Z6–10

***D.* x *elegantissima* 'Rosealind'** illus. p.153.

D. gracilis illus. p.145.

***D.* x *hybrida* 'Joconde'.** Deciduous, bushy, upright shrub. H 8ft (2.5m), S 4ft (1.2m). Produces, large, 5-petaled, white flowers, striped purple outside, and with yellow anthers, in early summer. Ovate, mid-green leaves have long points. Z6–8. **'Mont Rose'** illus. p.152. **'Strawberry Fields'** is spreading, with distinctive, pale yellowish-green leaves. Flowers are deep purplish-pink outside, with narrow white margins, and slightly paler within, fading with age.

***D. longifolia*.** Deciduous, arching shrub. H 6ft (2m), S 10ft (3m). Large clusters of 5-petaled, deep pink flowers are produced from early to midsummer. Narrowly lance-shaped leaves are gray-green. Z7–8. **'Veitchii'** illus. p.133.

D. monbeigii illus. p.149.

***D. pulchra*.** Vigorous, deciduous, upright shrub. H 8ft (2.5m), S 6ft (2m). Has peeling, orange-brown bark and lance-shaped, dark green leaves. Bears slender, pendulous panicles of 5-petaled, pink-tinged, white flowers in late spring and early summer. Z7–8

D.* x *rosea illus. p.146.

D. scabra illus. p.127. **'Candidissima'** is a deciduous, upright shrub. H 10ft (3m), S 6ft (2m). Has arching shoots, and peeling pale brown bark when mature. Produces narrowly ovate, dark green leaves. From early to midsummer, bears dense, upright clusters of fragrant, double, white flowers. **'Flore Pleno'** see *D.s.* 'Plena'. **'Plena'** (syn. *D.s.* 'Flore Pleno') produces double, white flowers, purplish-pink outside. Z6–8

***D. setchuenensis* var. *corymbiflora*.** Deciduous, upright shrub with peeling, pale brown bark when mature. H 6ft (2m), S 5ft (1.5m). Small, 5-petaled, white flowers are borne in broad clusters in early and mid-summer. Has lance-shaped, long-pointed, gray-green leaves. Z6–8

DIANELLA

Flax lily

HEMEROCALLIDACEAE

Genus of evergreen, summer-flowering perennials. Grow outdoors in mild-winter regions and in a cold greenhouse or frame elsewhere. Needs sun and well-drained, neutral to acidic soil. Propagate by division or seed in spring.

***D. caerulea*.** Evergreen, tuft-forming perennial. H 30in (75cm), S 1ft (30cm). In summer, has panicles of small, star-shaped, blue flowers, above grasslike leaves, followed by blue berries. Z9–10.

Cassa Blue ('Dbb03') illus. p.283.

D. tasmanica illus. p.239.

DIANTHUS

Carnation, Pink

CARYOPHYLLACEAE

Genus of summer-flowering, evergreen subshrubs and perennials, annuals and biennials, grown for their abundant flowers, often scented, some of which are excellent for cutting. Carnations and pinks (see below) are good for cut flowers and border decoration, the biennial *D. barbatus* (Sweet William) is suitable for bedding, and smaller, tuft-forming species and cultivars suit rock gardens. Needs an open, sunny position and well-drained, slightly alkaline soil, except for *D. pavonius*, which prefers acidic soil. Deadheading of repeat-flowering types is beneficial. Tall forms of carnations and pinks have a loose habit and need staking. Propagate border carnations by layering in late summer, other named forms by softwood cuttings in early to midsummer, and species by seed at any time. Prone to rust, red spider mite and virus infection through aphids, but many cultivars are available from virus-free stock.

Carnations and pinks have narrowly lance-shaped, silvery- or gray-green leaves, scattered up flower stems, which may coil outward on carnations. They are divided into the following groups, all with self-colored and bicolored cultivars. See also feature panel pp.266–267.

Carnations

Border carnations are annuals or evergreen perennials that flower prolifically once in midsummer and are good for border decoration and cutting. Each stem bears 5 or more, often scented, semidouble or double flowers, to 3in (8cm) across; picotee forms (with petals outlined in a darker color) are available. H 2½–3½ft (75cm–1.1m), S to 1ft (30cm).

Perpetual-flowering carnations are evergreen perennials that flower year-round if grown in a greenhouse, but more prolifically in summer. They are normally grown for cut flowers: flower stems should be disbudded, leaving one terminal bud per stem. Fully double flowers, to 4in (10cm) across, are usually unscented and are often flecked or streaked. H 3–5ft (1–1.5m), S 1ft (30cm) or more. Spray forms are not disbudded, so have 5 or more flowers per stem, each 2–2½in (5–6cm) across. H 2–3ft (60cm–1m), S to 1ft (30cm).

Malmaison carnations are evergreen perennials, derived from *D.* 'Souvenir de la Malmaison'. Grown under glass, they bear large, double, scented flowers sporadically during the year. Flowers can reach up to 5in (13cm) across, are mostly self-colored, and tend to split their calyces. H 20–28in (50–70cm), S 16in (40cm).

Pinks

Evergreen, clump-forming perennials, good for borders and for cutting, that in summer produce a succession of basal shoots, each bearing 4–6 fragrant, single to fully double flowers, 1½–2in (3.5–6cm) across. H 12–18in (30–45cm), S 9–12in (23–30cm) or more.

Old-fashioned pinks have a low, spreading habit and produce abundant flowers in one flowering period in mid-summer. Mule types (a border carnation crossed with a Sweet William) and laced types (in which the central color extends as a loop around each petal) are available.

Modern pinks, obtained by crossing an old-fashioned pink with a perpetual-flowering carnation, are more vigorous than old-fashioned pinks, and are repeat-flowering with two or three main flushes of flowers in summer.

Alpine pinks are evergreen species and cultivars forming neat mat or cushion plants. They will grow at the edge of a border or in a rock garden, trough or alpine house. In early summer, they bear single, semidouble or double, often scented flowers. Foliage is gray-green. H 3–4in (8–10cm), S 8in (20cm).

***D.* 'A.J. MacSelf'.** See *D.* 'Dad's Favourite'.

***D.* 'Albisola'.** Perpetual-flowering carnation. Fully double flowers are clear tangerine-orange. Z5–9

***D.* 'Aldridge Yellow'.** Border carnation. Semidouble flowers are clear yellow. Z5–9

***D.* 'Alice'.** Modern pink. Has clove-scented, semidouble, ivory-white flowers, each with a bold, crimson eye. Z5–9

D. alpinus (Alpine pink) illus. p.364. **'Joan's Blood'** illus. p.364.

***D.* 'Ann Franklin'.** Perpetual-flowering carnation. Produces pale yellow flowers margined and flecked with deep purplish-red. Z8–11

D. armeria (Deptford pink). Evergreen, tuft-forming perennial, sometimes grown as an annual. H 1ft (30cm), S 18in (45cm). Has narrowly lance-shaped, dark green leaves. In summer, tall stems bear small, 5-petaled, cerise-pink flowers in bunches. Good for a rock garden or bank. Z3–9

D.* x *arvernensis (Auvergne pink). Alpine pink. Single, pink flowers are produced on short stalks in late spring and early summer. Z5–9

D. barbatus (Sweet William). Bushy, short-lived perennial, grown as a biennial. H to 28in (70cm), S to 1ft (30cm). Has light to mid-green leaves, sometimes deep bronze-green. In late spring and early summer, bears dense clusters of small, single, sweet-scented, purple-red, pink, salmon-pink or white flowers, sometimes bicolored, each petal bearded with paler color at the base. Z3–9. **Nigrescens Group** cultivars, H 12–15in (30–38cm), have dark crimson flowers.

***D.* 'Becky Robinson'** (illus. p.266). Modern pink. Has strongly clove-scented, double, rose-pink flowers laced and flecked with crimson. Z5–9

***D.* 'Betty Morton'.** Modern pink. Has single, fragrant, deep pink flowers with maroon eyes. Z5–9

***D.* 'Bombardier'.** Evergreen, tuft-forming perennial. H and S 4in (10cm). Has a basal tuft of linear, gray-green leaves and, in summer, small, double, scarlet flowers. Good for a rock garden. Z5–9

***D.* 'Bovey Belle'** (illus. p.267). Modern pink. Bears clove-scented, fully double, bright purple flowers that are excellent for cutting. Z5–9

***D.* 'Brilliant Star'** (illus. p.266). Modern pink. Produces many fragrant, semidouble, glistening white flowers, with rich velvet-red centers, over mounded foliage. Z5–9

***D.* 'Brympton Red'.** Old-fashioned pink. Flowers are single, bright crimson with deeper shading. Z5–9

***D. caesius*.** See *D. gratianopolitanus*.

***D.* 'Carmine Letitia Wyatt'.** Modern pink. Produces double, slightly fragrant, salmon-pink flowers. Z5–9

D. carthusianorum illus. p.339.

***D.* 'Charles Musgrave'.** See *D.* 'Musgrave's Pink'.

***D.* 'Cheryl'.** See *D.* 'Houndspool Cheryl'.

D. chinensis (Indian pink). Slow-growing, bushy annual. H and S 6–12in (15–30cm). Lance-shaped leaves are pale or mid-green. Tubular, single or double flowers, 1in (25cm) or more across, and with open, spreading petals, in shades of pink, red or white, are produced in summer and early fall. Z9–11. **Baby Doll Series** illus. p.305. **'Fire Carpet'** illus. p.307. **Heddewigii Group**, H 1ft (30cm), has flowers in mixed colors.

***D.* 'Clara'.** Perpetual-flowering carnation. Fully double flowers are yellow with salmon flecks. Z5–9

***D.* 'Claret Joy'.** Modern pink. Produces double, crimson flowers. Z5–9

***D.* 'Constance Finnis'.** See *D.* 'Fair Folly'.

***D.* 'Cranmere Pool'** (illus. p.266). Modern pink. Double, pink-tinted, white flowers have crimson centers and a light fragrance. Z4–8

***D.* 'Crompton Princess'** (illus. p.266). Perpetual-flowering carnation. Flowers are white. Z5–9

***D.* 'Dad's Favourite'**, syn. *D.* 'A.J. MacSelf' (illus. p.266). Old-fashioned pink. Bears scented, semidouble, white flowers with chocolate-brown lacing. Z5–9

***D.* 'Dainty Dame'** (illus. p.266). Modern pink. Has highly fragrant, single, white flowers with maroon centers and fringed petal edges. Z6–10

D. deltoides (Maiden pink). Evergreen, mat-forming, basal-tufted perennial. H 6in (15cm), S 1ft (30cm). In summer, small, 5-petaled, white, pink or cerise flowers are borne singly above tiny, lance-shaped leaves. Good for a rock garden or bank. Trim back after flowering. Z3–10. **'Flashing Light'** see *D.d.* 'Leuchtfunk'. **'Leuchtfunk'** (syn. *D.d.* 'Flashing Light') illus. p.365.

***D.* 'Denis'.** Modern pink. Strongly clove-scented, fully double, magenta flowers. Z5–9

***D.* 'Devon Dove'** (illus. p.266). Modern pink. Prolific, medium to tall and long-flowering. Produces well-scented, double, pure white flowers with lacy tips. Z5–9

***D.* 'Devon Flavia'** (illus. p.266). Modern pink with compact growth. Highly scented, double, bright sugar-pink flowers have lacy tips and richer pink centers. Repeat flowers. Tolerates extreme weather. Z5–9

***D.*'Devon Wizard'** (illus. p.267). Modern pink. Prolific, medium to tall and long-flowering. Bears vibrant, highly scented, double, cerise-purple flowers with deep red centers. Z5–9

***D.* 'Devon Xera'**, syn. *D.* Fire Star. Modern pink. Has fragrant, fiery crimson flowers with darker crimson eyes. Z5–9

***D.* 'Diane'.** Modern pink. Produces clove-scented, double, deep salmon-pink flowers. Z5–9

***D.* 'Doris'** (illus. p.266). Modern pink. Has compact growth and an abundance of fragrant, semidouble, pale pink flowers, each with a salmon-red ring toward base of flower. Good for cutting. Z5–9
***D.* 'Duchess of Westminster'** (illus. p.266). Vigorous Malmaison carnation. Bears salmon-pink flowers with more robust calyces than most Malmaison carnations. Z5–9
***D.* 'Emile Paré'.** Old-fashioned, mule pink. Has clusters of semidouble, salmon-pink flowers and, unusually for a pink, mid-green foliage. Z5–9
***D.* 'Evening Star'** (illus. p.266). Modern pink. Has abundant, single or semidouble, rounded, bright deep pink flowers, with gently rippled edges and crimson eyes, over mounded foliage. Z5–9
***D.* 'Fair Folly'**, syn. *D.* 'Constance Finnis'. Modern pink. Flowers are single and usually dusky-pink to dusky-purple, with 2 white splashes on each petal. Z5–9
***D.* 'Feuerhexe'** (illus. p.267). Alpine pink. Strongly scented, fringed, single, magenta flowers are produced throughout summer. Has silvery-blue leaves. Z3–10
***D.* Fire Star.** See *D.* 'Devon Xera'.
***D.* 'Fragrant Ann'.** Perpetual-flowering carnation. Produces fragrant, double, white flowers. Z5–9
***D.* 'Fusilier'** (illus. p.267). Dwarf, modern pink. H 6in (15cm). Fragrant, single, rose-red flowers have blood-red eyes. Z4–8
***D.* 'Golden Cross'** (illus. p.267). Border carnation. Produces bright yellow flowers on short, stiff stems. Z5–9
***D.* 'Gran's Favourite'** (illus. p.266). Old-fashioned pink. Bears fragrant, semidouble, white flowers with deep raspberry lacing. Z5–9
D. gratianopolitanus, syn. *D. caesius* (Cheddar pink), illus. p.363.
***D.* 'Green Eyes'.** See *D.* 'Musgrave's Pink'.
***D. haematocalyx*.** Evergreen, tuft-forming perennial. H 5in (12cm), S 4in (10cm). Leaves are lance-shaped and usually glaucous. Bears 5-petaled, toothed, beige-backed, deep pink flowers on slender stems in summer. Suits a rock garden or scree. Z5–9
***D.* 'Haytor'.** See *D.* 'Haytor White'.
***D.* 'Haytor Rock'.** Modern pink. Has double, scarlet-streaked, very pale pink flowers with fringed petal edges. Z5–9
***D.* 'Haytor White'**, syn. *D.* 'Haytor' (illus. p.266). Modern pink. Fully double, white flowers, borne on strong stems, have a good scent. Widely grown, especially to provide cut flowers. Z5–9
***D.* 'Hidcote'.** Alpine pink. H and S 4in (10cm). Bears a basal tuft of linear, spiky, gray-green leaves and, in summer, double, red flowers. Suits a rock garden. Z5–9
***D.* 'Hilstar'.** See *D.* Starlight.
***D.* 'Houndspool Cheryl'**, syn. *D.* 'Cheryl'. Modern pink. Has double, currant-red flowers. Z5–9
***D.* 'Houndspool Ruby'**, syn. *D.* 'Ruby', *D.* 'Ruby Doris', illus. p.268.
***D.* 'Inchmery'** (illus. p.266). Old-fashioned, mule pink. Bears scented, double, pale pink flowers above blue-green leaves. Thrives on heavy soil. Z4–9
***D.* 'India Star'** (illus. p.267). Modern pink. Produces single, rich rose-pink flowers, with bold, deep red eyes and a fine fragrance, over mounded foliage. Z5–9
***D.* 'Inshriach Dazzler'.** Alpine pink. Produces solitary, short-stemmed, single, deep carmine-red flowers with fringed petals. Z5–9
***D.* 'Joy'.** Modern pink. Bears semidouble, pink flowers that are strongly scented and good for cutting. Z5–9
***D.* 'Kesteven Kirkstead'.** Modern pink. Bears clove-scented, single, white flowers with fringed petals and maroon eyes that age to purple. Z5–9
***D.* 'Kobusa'.** See *D.* Pierrot.
***D.* 'La Bourbille'.** See *D.* 'La Bourboule'. ***D.* 'La Bourboule'**, syn. *D.* 'La Bourbille', illus. p.365.
***D.* 'La Bourboule Alba'.** Alpine pink. Slow-growing with a neat habit. Single, white flowers have fringed petals. Z5–9
***D.* 'Laced Monarch'.** Modern pink. Double flowers are pink, laced with maroon-red. Z5–9
***D.* 'Letitia Wyatt'.** Modern pink. Has strongly fragrant, double, light pink flowers. Z5–9
***D.* Lily the Pink ('Wp05 Idare')** (illus. p.267). Modern pink. Fringed, double, vivid lavender-pink flowers have redder centers and a sweet, spicy fragrance. Unusually vigorous. Z4–8
***D.* 'Little Jock'** illus. p.363.
***D.* 'Manon'.** Perpetual-flowering carnation. One of the best deep pink cultivars with fully double flowers. Z5–9
***D.* 'Mars'.** Alpine pink. H and S 4in (10cm). Bears small, double, cherry-red flowers in summer, above a basal tuft of linear, gray-green leaves. Good in a rock garden. Z5–9
D. microlepis illus. p.366.
***D.* 'Milky Way'** (illus. p.266). Perpetual-flowering, spray carnation. Shallowly toothed, double, white flowers may be slightly cream in the centers. Z4–8
***D.* Miss Pinky.** See *D.* 'Valda Wyatt'.
***D.* 'Monica Wyatt'** (illus. p.267). Modern pink. Fragrant, fringed, double, deep pink flowers, with crimson centers, are borne over ay long season. Z5–9
***D. monspessulanus*.** Evergreen, mat-forming perennial. H 1ft (30cm), S 4–6in (10–15cm). In summer, abundant, strongly fragrant, 5-petaled, deeply fringed, pale lavender flowers rise on slender stems above short tufts of fine, grasslike leaves. Good for a rock garden. Needs gritty soil. Z5–9
***D.* 'Moulin Rouge'** (illus. p.267). Modern pink. Has double, pink flowers with burgundy lacing, rich burgundy centers, and a strong clove scent. Z5–9
***D.* 'Mrs. Sinkins'** (illus. p.266). Old-fashioned pink. Heavily scented flowers are fringed, fully double and white. Z5–9
***D.* 'Musgrave's Pink'**, syn. *D.* 'Charles Musgrave', *D.* 'Green Eyes' (illus. p.266). Old-fashioned pink. Bears single, white flowers with green eyes. Z5–9
D. myrtinervius illus. p.364.
***D.* Mystic Star ('Wp05Saphire').** Modern pink. Bears strongly clove-scented, single, maroon flowers; each petal has a large pale pink to white blotch and is edged with the same color. Z5–9
***D. neglectus*.** See *D. pavonius*.
***D.* 'Neon Star'** (illus. p.267). Modern pink. Has mound-forming. silvery-green foliage and single, vivid magenta flowers over a very long season. Z5–9
***D.* 'Night Star'.** Modern pink. Produces single, deep red-purple flowers, blotched and margined rich pink; petal edges are fringed. Z5–9
***D.* Passion ('WpPassion')** (illus. p.267). Modern pink. Has compact growth and bears highly scented, rounded, double, bright red flowers over a very long season. Tolerates extreme weather conditions. Z5–9
D. pavonius, syn. *D. neglectus*, illus. p.363.
***D.* Pierrot ('Kobusa').** Perpetual-flowering carnation. Bears fully double, light rose-lavender flowers, with purple-edged petals. Z6–10
***D.* 'Pike's Pink'** illus. p.364.
***D.* 'Pink Jewel'** (illus. p.267). Alpine pink. Has strongly scented, semidouble, pink flowers. Z5–9
***D.* 'Pixie Star'** (illus. p.267). Modern pink. Bears single, rose-lavender flowers, with slightly wavy petals and deep pink eyes, over mound-forming foliage. Z5–9
***D.* 'Queen of Sheba'** (illus. p.267). Old-fashioned pink. Has clove-scented, single, white flowers, laced and flaked with magenta-purple. Z5–8
***D.* 'Raggio di Sole'** (illus. p.267). Perpetual-flowering carnation. Fully double flowers are bright orange. Z5–9
***D.* 'Red Star'.** Alpine pink. Bears single, deep reddish pink flowers with deep red central blotches and conspicuous white stamens. Z5–9
***D.* 'Rose de Mai'** (illus. p.267). Old-fashioned, mule pink. Double, mauve-pink flowers have darker centers. Z4–9
***D.* 'Rose Joy'.** Modern pink. Produces fragrant, double, cerise pink flowers. Z5–9
***D.* 'Ruby'.** See *D.* 'Houndspool Ruby'.
***D.* 'Ruby Doris'.** See *D.* 'Houndspool Ruby'.
***D.* 'Sandra Neal'.** Border carnation. Fully double, golden-apricot flowers are flaked deep rose-pink. Z5–9
***D.* 'Sops-in-wine'.** Old-fashioned pink. Bears fragrant, single, maroon flowers with white markings. Z5–9
***D.* Starlight ('Hilstar')** (illus. p.267). Modern pink. Strongly scented, single, rose-lavender flowers turn to lilac, then mature to almost white. Z5–9
***D.* 'Starry Eyes'.** Modern pink. Bears fragrant, single, fringed, white flowers with maroon centers. Z5–9
***D. superbus*.** Evergreen, mat-forming perennial. H to 8in (20cm), S 6in (15cm). Has narrowly lance-shaped, pale green leaves. In summer, slender stems bear very fragrant, 5-petaled, deeply fringed, pink flowers with darker centers. Suits a rock garden. Z3–8. **'Crimsonia'** (illus. p.267) is an old-fashioned pink. Slender, rather floppy stems bear fragrant, high dissected, single, scarlet flowers.
***D.* 'Tayside Red'** (illus. p.267). Malmaison carnation. Bears brick-red flowers through summer and into fall. Does best in a cool glasshouse or conservatory. Z10–11
***D.* Tickled Pink ('DevonPp11')** (illus. p.267). Modern pink. Has compact growth and bears rounded, semidouble, fringed, deep lavender flowers, with a strong spicy scent, over a long season. Tolerates extreme weather conditions. Z5–9
***D.* 'Valda Wyatt'**, syn. *D.* Miss Pinky (illus. p.267). Modern pink. Very fragrant fully double flowers are rose-lavender. Z5–9
***D.* 'Whatfield Cancan'.** Alpine pink. Produces fragrant, double, pink flowers with fringed petals. Z3–8
***D.* 'Whatfield Magenta'.** Alpine pink. Produces fragrant, single, brilliant magenta flowers with paler throats. Has deep blue leaves. Z3–8
***D.* 'White Joy'.** Modern pink. Has semidouble, white flowers. Petals are flushed with light coral pink at the base. Compact habit. Z5–9
***D.* 'White Ladies'** (illus. p.266). Old-fashioned pink. Bears very fragrant, fully double, white flowers with greenish centers. Z5–9
***D.* 'Widecombe Fair'.** Modern pink. Semidouble flowers, borne on strong stems, are of unusual coloring—peach-apricot, opening to blush-pink. Z5–9

DIASCIA

SCROPHULARIACEAE

Genus of summer- and fall-flowering annuals and perennials, some of which are semievergreen, grown for their tubular, pink flowers. Suitable for banks and borders. Needs sun and humus-rich, well-drained soil that is not too dry. Cut back old stems in spring. Propagate by softwood cuttings in late spring, by semiripe cuttings in summer, or by seed in fall.
***D. barberae* 'Blackthorn Apricot'**, syn. *D.* 'Blackthorn Apricot', illus. p.278. **'Fischer's Flora'**, syn. *D. cordata* of gardens, illus. p.339. **'Ruby Field'** is a mat-forming perennial. H 3in (8cm), S 6in (15cm). Heart-shaped, pale green leaves clothe short, wiry stems. Produces tubular, wide-lipped, salmon-pink flowers throughout summer. Z6–10
***D.* 'Blackthorn Apricot'.** See *D. barberae* 'Blackthorn Apricot'.
D. cordata of gardens. See *D. barberae* 'Fischer's Flora'.
***D.* Ice Cracker ('Herack')** illus. p.337.
D. integerrima, syn. *D. integrifolia*. Creeping perennial. H 1ft (30cm) or more, S to 20in (50cm). Has slender, wiry, upright stems bearing linear to oblong-lance-shaped, sparsely toothed leaves. Loose racemes of purplish-pink, broad-lipped flowers are produced in summer. Z6–10
***D. integrifolia*.** See *D. integerrima*.
***D.* Little Dancer ('Pendan')** illus. p.301.
D. rigescens illus. p.339.
***D.* 'Salmon Supreme'** illus. p.345.
***D. vigilis*.** Prostrate perennial. H 12–16in (30–40cm), S 2ft (60cm). Pale green leaves are small, rounded and toothed. Upright branchlets bear loose spikes of flattish, outward-facing, pale pink flowers in summer. Z7–9

DICENTRA

PAPAVERACEAE

Genus of perennials, grown for their elegant sprays of pendent flowers. Most do best in semishade and humus-rich, moist but well-drained soil. Propagate by division when dormant in late winter, species also by seed in fall. ⓘContact with the foliage may aggravate skin allergies.
***D.* 'Adrian Bloom'.** Spreading, tuft-forming perennial. H 18in (45cm), S 1ft (30cm). In late spring, and intermittently until fall, bears sprays of pendent, heart-shaped, rich carmine-pink flowers above ovate, gray-green leaves. Z4–8

D. cucullaria (Dutchman's breeches) illus. p.348.
D. eximia of gardens. See *D. formosa*.
D. formosa, syn. *D. eximia* of gardens. Spreading, tufted perennial. H 18in (45cm), S 1ft (30cm). In late spring and early summer, bears slender, arching sprays of pendent, heart-shaped, pink or dull red flowers above ovate, finely cut, gray-green leaves. Z4–8
D. peregrina. Tuft-forming perennial. H 3in (8cm), S to 2in (5cm). Locket-shaped, pink flowers are borne in early summer, above fernlike, blue-green leaves. Needs gritty soil. Suitable for an alpine house. Z4–8
D. spectabilis. See *Lamprocapnos spectabilis*.
***D.* 'Spring Morning'** illus. p.256.
***D.* 'Stuart Boothman'** illus. p.268.

DICHELOSTEMMA

ASPARAGACEAE

Genus of summer-flowering corms, grown for their dense flower heads. Related to *Brodiaea* and similar to *Allium* in appearance. Where marginally hardy, best grown in a sheltered site. Needs a sunny position and well-drained soil. Water freely in spring, but allow to dry out after flowering. Propagate by seed in fall or spring, or by offsets in fall before growth commences.
D. capitatum, syn. *Brodiaea capitata, B. pulchella, Dichelostemma pulchellum*. Early summer-flowering corm. H 12–24in (30–60cm), S 3–4in (8–10cm). Long, narrow leaves are semierect and basal. Slender, leafless stem bears a dense head of narrowly funnel-shaped, pale to deep violet flowers, ½–¾in (1–2cm) long, with violet bracts. Z9–11
D. congestum, syn. *Brodiaea congesta*, illus. p.392.
D. ida-maia, syn. *Brodiaea ida-maia*. Early summer-flowering corm. H to 3ft (1m), S 3–4in (8–10cm). Long, narrow leaves are semierect and basal. Leafless stem bears a dense head of flowers, each ¾–1in (2–2.5cm) long, with a red tube and 6 green petals. Z5–8
D. pulchellum. See. *D. capitatum.*

DICHORISANDRA

COMMELINACEAE

Genus of erect, clump-forming, evergreen perennials, grown for their ornamental foliage. Frost tender. Prefers fertile, moist but well-drained soil, humid conditions and partial shade. Propagate by division in spring or by stem cuttings in summer.
D. reginae illus. p.473.

Dichromena colorata. See *Rhynchospora colorata.*

DICKSONIA

DICKSONIACEAE

Genus of evergreen or semievergreen, treelike ferns that resemble palms and that are sometimes used to provide height in fern plantings. Needs semishade and humus-rich, moist soil. Remove faded fronds regularly. Propagate by spores in summer.
D. antarctica (Australian tree fern) illus. p.290.
D. fibrosa. Evergreen, treelike fern (deciduous in cold climates). H to 20ft (6m), S to 12ft (4m). Sturdy trunks are crowned by a rosette of spreading, lance-shaped, dark green, divided fronds, to 6ft (2m) long. Z9–10
D. squarrosa. Evergreen, treelike fern (deciduous in cold climates). H to 20ft (6m), S to 12ft (4m). Slender trunks are crowned by a rosette of spreading, divided, lance-shaped, mid-green fronds, to 6ft (2m) long, with blackish stalks and midribs. Z9–10

DICTAMNUS

RUTACEAE

Genus of summer-flowering perennials. Requires full sun and fertile, well-drained soil. Resents disturbance. Propagate by seed sown in late summer when fresh. ⓘ The foliage, roots and seeds of *D. albus* may cause mild stomach upset if ingested, and contact with the foliage may cause photodermatitis.
D. albus* var. *albus (Burning bush) illus. p.230. **var. *purpureus*** (syn. *D. fraxinella*) is an upright perennial. H 3ft (1m), S 2ft (60cm). Has light green leaves divided into ovate leaflets. In early summer, bears spikes of fragrant, star-shaped, purplish-pink flowers with long stamens. Z3–8
D. fraxinella. See *D. albus* var. *purpureus*.

Didiscus coeruleus. See *Trachymene coerulea.*

DIDYMOCHLAENA

DRYOPTERIDACEAE

Genus of one species of evergreen fern. Frost tender. Has tufts of glossy, mid-green fronds, tinged with rose-pink or red when young. Need partial shade, high humidity and moist, humus-rich soil. Propagate by spores as soon as ripe, or divide in spring.
D. lunulata. See *D. truncatula*.
D. truncatula, syn. *D. lunulata*. Evergreen fern. H and S to 3ft (1m). Erect rhizomes bear triangular, divided fronds, 2–5ft (60cm–1.5m) long, with simple diamond-shaped segments. Z9–11 (min. 50°F/10°C)

DIEFFENBACHIA

Dumb cane, Leopard lily

ARACEAE

Genus of evergreen, tufted perennials, grown for their large, handsome leaves. Frost tender. Needs partial shade and fertile, well-drained soil. Propagate by leafless pieces of stem placed horizontally in compost, or by stem cuttings, in spring or summer. Scale insect or red spider mite can be troublesome. ⓘ All parts may cause severe discomfort if ingested; contact with sap may irritate skin.
D. amoena of gardens. See *D. seguine* 'Amoena'.
***D.* 'Exotica'.** See *D. seguine* 'Exotica'.
***D. maculata* 'Exotica'.** See *D. seguine* 'Exotica'. **'Rudolph Roehrs'** see *D. seguine* 'Rudolph Roehrs'.
***D.* 'Memoria'.** See *D. seguine* 'Memoria Corsii'.
D. seguine. Evergreen, tufted perennial. H and S 3ft (1m) or more. Broadly lance-shaped leaves, to 18in (45cm) long, are glossy and dark green. Insignificant, tiny, greenish-white flowers, clustered on the spadix, are surrounded by a narrow, leaflike spathe that is produced intermittently. Z14–15. (min. 59°F/15°C)
'Amoena' (syn. *D. amoena* of gardens), H to 6ft (2m), is robust, with creamy-white bars along lateral veins on the leaves. **'Exotica'** (syn. *D.* 'Exotica', *D. maculata* 'Exotica') illus. p.465. **'Memoria Corsii'** (syn. *D.* 'Memoria') has gray-green leaves, marked dark green and spotted white. **'Rudolph Roehrs'** (syn. *D. maculata* 'Rudolph Roehrs', *D.s.* 'Roehrs') illus. p.474.

DIERAMA

Angel's fishing rod, Wandflower

IRIDACEAE

Genus of evergreen, clump-forming, summer-flowering corms with pendent, funnel- or bell-shaped flowers on long, arching, wiry stems. Thrives near ponds. Prefers a warm, sunny, sheltered site and well-drained soil that is moist during summer growth. Dies down partially in winter. Propagate by division of corms in spring or by seed in fall or spring. Resents disturbance; divisions take a year or more to flower.
D. dracomontanum, syn. *D. pumilum*. Vigorous, evergreen, upright perennial. H 30in (75cm), S 1ft (30cm). In summer, freely produces nodding, funnel-shaped flowers, in shades of pink and violet, on wiry stems. Leaves are grasslike. Z8–9
D. ensifolium. See *D. pendulum*.
D. igneum. Clump-forming, cormous perennial. H to 3ft (1m), S 20in (50cm). In summer, bears long, pendulous spikes with 4–11 bell-shaped, lilac to rosy pink flowers per branch. Has narrow, linear leaves. Z6–10
D. pendulum, syn. *D. ensifolium* (Angel's fishing rod), illus. p.392.
D. pulcherrimum illus. p.386.
D. pumilum. See *D. dracomontanum.*

DIERVILLA

CAPRIFOLIACEAE

Genus of deciduous, summer-flowering shrubs. Similar to *Weigela*. Needs partial shade or full sun and well-drained, moderately fertile soil. To keep neat, remove 2- and 3-year-old stems in winter or after flowering. Propagate by semiripe cuttings in late summer or hardwood cuttings in fall.
D. sessilifolia. Deciduous, spreading shrub. H and S 3–5ft (1–1.5m). Narrowly ovate, pointed, serrated, green leaves are often copper-tinted when young. Bears terminal and lateral clusters of tubular, pale yellow flowers in summer. To treat as a herbaceous perennial, cut back to ground level each spring and apply mulch and fertilizer. Z4–8

DIETES

IRIDACEAE

Genus of evergreen, irislike, rhizomatous perennials, grown for their attractive flowers borne in spring or summer. Needs sun or partial shade and humus-rich, well-drained soil that does not dry out excessively. Propagate by seed in fall or spring, or by division in spring (although divisions do not become re-established very readily).
D. bicolor illus. p.395.
D. iridioides, syn. *D. vegeta* of gardens. Evergreen, spring- and summer-flowering, rhizomatous perennial. H to 2ft (60cm), S 1–2ft (30–60cm). Has sword-shaped, semierect, basal leaves in a spreading fan. Branching, wiry stems bear irislike, white flowers, 2½–3in (6–8cm) across; the 3 large petals each have a central, yellow mark. Z8–11
D. vegeta of gardens. See *D. iridioides*.

DIGITALIS

Foxglove

PLANTAGINACEAE

Genus of biennials, perennials and shrubs, grown for their imposing flower spikes, borne in summer. Species mentioned below grow in most conditions, even dry, exposed sites, but do best in semishade and moist but well-drained soil. Propagate by seed in fall. ⓘ All parts may cause severe discomfort if ingested. Contact with foliage may irritate skin.
D. ambigua. See *D. grandiflora*.
D. canariensis, syn. *Isoplexis canariensis,* illus. p.459.
D. eriostachya. See *D. lutea*.
D. ferruginea. Perennial best treated as a biennial. H 3–4ft (1–1.2m), S 1ft (30cm). Long, slender spikes bear funnel-shaped, orange-brown and white flowers in midsummer above basal rosettes of ovate, rough leaves. Z4–9
D. grandiflora, syn. *D. ambigua* (Yellow foxglove). Evergreen, clump-forming perennial. H 30in (75cm), S 1ft (30cm). In summer, bears racemes of downward-pointing, tubular, creamy-yellow flowers above a rosette of ovate to oblong, smooth, strongly veined leaves. Z3–8
D. lutea, syn. *D. eriostachya*. Upright perennial. H 30in (75cm), S 1ft (30cm). In summer, delicate spires of downward-pointing, narrowly tubular, creamy-yellow flowers are borne above a rosette of ovate, smooth, mid-green leaves. Z3–8
D.* x *mertonensis. Clump-forming perennial. H 30in (75cm), S 1ft (30cm). Produces spikes of downward-pointing, tubular, rose-mauve to coppery flowers in summer, above a rosette of ovate, hairy, soft leaves. Divide after flowering. Z3–8
D. purpurea. Upright, short-lived perennial, grown as a biennial. H 3–5ft (1–1.5m), S 2ft (60cm). Has a rosette of ovate, rough, deep green leaves and, in summer, tall spikes of tubular flowers in shades of pink, red, purple or white. Z4–8.
f. *albiflora* (syn. *D.p.* f. *alba*) illus. p.299. **'Pam's Choice'** has white flowers, stained deep red in the throat. **'Sutton's Apricot'** has apricot-pink flowers.
D.* x *valinii. Rosette-forming or low-branching, short-lived perennial. H 3ft (1m), S 20in (50cm). Has ovate, hairy leaves and, in summer, bears dense racemes of horizontally-held, tubular flowers in shades of pink and orange, paler in the throat. Sterile and produces no pollen. Prone to winter rot and often best grown as an annual. Z6–10. **Illumination Apricot ('Chelsea Gold')** has orange flowers, pinkish in bud, with a creamy throat. **Illumination Pink ('Tmdgfp001')** has bright pink flowers, orange shading to cream in the throat.

DILLENIA

DILLENIACEAE

Genus of evergreen or briefly deciduous, spring-flowering trees, grown for their flowers and foliage and for shade. Frost tender. Needs moisture-retentive, fertile soil and full light. Water potted plants freely while in full growth, less in winter. Propagate by seed in spring.

D. indica (Elephant apple). Briefly deciduous, spreading tree. H and S 25–40ft (8–12m). Has ovate, serrated, boldly parallel-veined, glossy leaves, each 1ft (30cm) long. In spring, bears nodding, cup-shaped, white flowers, each 6–8in (15–20cm) across, followed by edible, globular, greenish fruits. Z14–15 (min. 59°F/15°C)

DIMORPHOTHECA

African daisy, Cape marigold

ASTERACEAE/COMPOSITAE

Genus of annuals or evergreen, subshrubby perennials. Grow in sun and fertile, very well-drained soil. Deadhead to prolong flowering. Propagate annuals by seed sown under glass in midspring, perennials by semiripe cuttings in summer. Susceptible to botrytis in wet summers.

D. annua. See *D. pluvialis*.

D. barberae of gardens. See *Osteospermum jucundum*.

D. pluvialis, syn. *D. annua* (Rain daisy), illus. p.299.

DIONAEA

DROSERACEAE

Genus of one species of evergreen, insectivorous, rosette-forming perennial. Frost tender. Needs partial shade and a humid atmosphere; grow in a mixture of peat and moss, kept constantly moist. Propagate by seed or division in spring.

D. muscipula (Venus flytrap) illus. p.473.

DIONYSIA

PRIMULACEAE

Genus of evergreen, tufted or cushion forming, subshrubby perennials. Grow in an alpine house in sun and very gritty, well-drained soil. Position deep collar of grit under cushion and ensure good ventilation at all times. Dislikes winter wet. Propagate by softwood cuttings in summer. Plants are susceptible to botrytis.

D. aretioides illus. p.358.

D. microphylla. Evergreen perennial. H 2in (5cm), S 6in (15cm). Rosettes of ovate to rounded, often sharply pointed, gray-green leaves, with a mealy, yellow coating beneath, form tight cushions. Small, short-stemmed, 5-petaled, white-eyed, pale to deep violet-yellow flowers, with darker petal bases, are borne in early spring. Z5–7

D. tapetodes illus. p.358.

DIOON

ZAMIACEAE

Genus of evergreen, palmlike cycads. Frost tender. Requires full sun and fertile, well-drained soil. Water potted specimens moderately, less when not in full growth. Propagate by seed in spring.

D. edule (Virgin's palm). Slow-growing, evergreen cycad, eventually with a thick, upright trunk. H 6–12ft (2–4m), S 5–10ft (1.5–3m). Leaves are featherlike, 2–4ft (60cm–1.2m) long, with spine-tipped, blue-green leaflets. Z8–11 (min. 55°F/13°C)

DIOSCOREA

DIOSCOREACEAE

Genus of tuberous, deciduous or evergreen, climbing perennials, some of which are succulents, grown mainly for their decorative leaves. Insignificant flowers are generally yellow. Frost tender. Prefers full sun or partial shade and fertile, well-drained soil. Propagate by division, or by cutting off sections of tuber in spring or fall, or by seed in spring.

D. discolor, syn. *D. dodecaneura,* (Common yam), illus. p.459.

D. dodecaneura. See *D. discolor*.

D. elephantipes, syn. *Testudinaria elephantipes*, illus. p.492.

Diosphaera. See *Trachelium*.

DIPCADI

ASPARAGACEAE

Genus of spring-flowering bulbs, grown mainly for botanical interest. Will not tolerate cold, wet winters, so best grown in a cold frame or alpine house. Needs a warm, sunny situation and light, well-drained soil. Dormant in summer. Propagate by seed in fall.

D. serotinum illus. p.422.

DIPELTA

CAPRIFOLIACEAE

Genus of deciduous shrubs, with bold, long-pointed leaves, grown for their showy, tubular flowers and peeling bark. After flowering, bracts beneath flowers enlarge and become papery, surrounding the fruits. Requires sun or semishade and fertile, well-drained soil. Benefits from the occasional removal of old shoots after flowering. Propagate by softwood cuttings in summer.

D. floribunda illus. p.111.

D. yunnanensis illus. p.110.

DIPHYLLEIA

BERBERIDACEAE

Genus of perennials with creeping rootstocks and umbrella-like leaves. Best suited to woodland gardens. Needs semishade and moist soil. Propagate by division in spring or by seed in fall.

D. cymosa (Umbrella leaf). Rounded perennial. H 2ft (60cm), S 1ft (30cm). Bears large, rounded, 2-lobed leaves. In spring, has loose heads of inconspicuous, white flowers followed by indigo-blue berries on red stalks. Z7–10

DIPLACUS

Monkey Flower

PHRYMACEAE/SCROPHULARIACEAE

Genus of annuals, perennials and evergreen subshrubs and shrubs. Most need well-drained soil in sun or light shade; some need wet soil. Propagate perennials by division in spring; subshrubs and shrubs by softwood cuttings in late summer; annuals and all species by seed in fall or spring.

D. aurantiacus, syn. *Mimulus aurantiacus, M. glutinosus*, illus. p.162.

Dipladenia. See *Mandevilla*.

DIPLARRHENA

IRIDACEAE

Genus of evergreen perennials, grown for their fragrant, irislike flowers. Needs sun and well-drained soil. Propagate by seed or by division in spring.

D. moraea illus. p.264.

DIPSACUS

Teasel

CAPRIFOLIACEAE

Genus of biennials or short-lived perennials, grown for their flower heads, which are good for drying. Requires sun or partial shade and any fertile soil. Sow seed in fall or spring.

D. fullonum. Prickly biennial. H 5–6ft (1.5–2m), S 12–32in (30–80cm). In the first year, produces a basal rosette of toothed, dark green leaves covered in spiny pustules. Thistlelike, pinkish-purple or white flower heads, with stiff, prickly bracts, are borne terminally on upright stems with paired leaves in mid- and late summer of the second year. Z5–8

Dipteracanthus. See *Ruellia*.

DIPTERONIA

SAPINDACEAE/ACERACEAE

Genus of deciduous trees and shrubs, grown for their foliage and fruits. Needs full sun and fertile, well-drained soil. Propagate by softwood cuttings in summer or by seed in fall.

D. sinensis. Deciduous, spreading, sometimes shrubby tree. H 30ft (10m), S 20ft (6m). Large, mid-green leaves have 7–11 ovate to lance-shaped leaflets. Produces inconspicuous, greenish-white flowers in summer, followed by large clusters of winged, red fruits. Z8–10

DISA

ORCHIDACEAE

See also ORCHIDS.

D. uniflora. Deciduous, terrestrial orchid. H 1½–2ft (45–60cm). Has narrowly lance-shaped, glossy, dark green leaves, to 9in (22cm) long. In early summer, each stem bears up to 7 hooded, scarlet flowers, 3–4in (8–10cm) long, with darker veins and suffused yellow. Needs partial shade and continually moist soil. Raise from seed or propagate by division of offsets when dormant. Z13–15 (min.41°F/5°C, max. 75°F/24°C)

DISANTHUS

HAMAMELIDACEAE

Genus of one species of deciduous, fall-flowering shrub, grown for its overall appearance and fall color. Needs partial shade and humus-rich, moist but not wet, neutral to acidic soil. Propagate by layering in spring or by seed when ripe or in spring.

D. cercidifolius illus. p.141.

DISCARIA

RHAMNACEAE

Genus of deciduous or almost leafless shrubs and small trees, grown for their habit and flowers. Spiny, green shoots assume function of leaves. Needs a sheltered, sunny site and fertile, well-drained soil. Propagate by softwood cuttings in summer.

D. toumatou (Wild Irishman). Deciduous or almost leafless, bushy shrub. H and S 6ft (2m). Shoots have sharp, rigid spines. Tiny, star-shaped, greenish-white flowers are borne in dense clusters in late spring. Z8–9

DISOCACTUS

CACTACEAE

Genus of epiphytic, perennial cacti with flattened, strap-shaped stems. Closely related to *Epiphyllum,* with which it hybridizes. Spines are insignificant. Stems may die back after flowering. Frost tender. Needs partial shade and rich, well-drained soil. Propagate by stem cuttings in spring or summer.

D. ackermannii, syn. *Epiphyllum ackermannii, Nopalxochia ackermannii* (Red orchid cactus). Erect, then pendent, epiphytic, perennial cactus. H 1ft (30cm), S 2ft (60cm). Has fleshy, toothed, green stems, to 3in (7cm) across and 16in (40cm) long, with funnel-shaped, red flowers, 6in (15cm) across, in spring–summer, along indented edges of stems. Z11–14

D. flagelliformis, syn. *Aporocactus flagelliformis* (Rat's-tail cactus), illus. p.483.

***D.* 'Gloria'** illus. p.485.

***D.* 'Jennifer Ann'** illus. p.496.

***D.* 'M.A. Jeans'** illus. p.485.

***D. phyllanthoides* 'Deutsche Kaiserin'** illus. p.485.

DISPORUM

Fairy bells

COLCHICACEAE

Genus of spring- or early summer-flowering perennials. Suits a woodland garden. Requires a cool, semishaded site and humus-rich soil. Propagate by division in spring or by seed in fall.

D. hookeri. Clump-forming perennial. H 30in (75cm), S 1ft (30cm). Leaves are narrowly ovate and mid-green. Orange-red berries in fall follow clusters of drooping, open bell-shaped, greenish-white flowers in spring. Z4–9

***D. sessile* 'Variegatum'.** Rapidly spreading, clump-forming perennial. H 18in (45cm), S 1ft (30cm). Solitary tubular-bell-shaped to bell-shaped, creamy-white flowers are produced in spring. Narrowly ovate, pleated leaves are irregularly striped with white. Z4–9

DISTICTIS

BIGNONIACEAE

Genus of evergreen, woody-stemmed, tendril climbers, grown for their colorful,

trumpet-shaped flowers. Frost tender. Well-drained soil is suitable with full light. Water freely in summer, less at other times. Support for stems is necessary. Thin out congested growth in spring. Propagate by softwood cuttings in early summer or by semiripe cuttings in late summer.
D. buccinatoria, syn. *Phaedranthus buccinatorius* (Mexican blood flower), illus. p.461.

DISTYLIUM

HAMAMELIDACEAE

Genus of evergreen shrubs and trees, grown for their foliage and flowers. Prefers a sheltered, partially shaded position and moist, peaty soil. Propagate by semiripe cuttings in summer.
D. racemosum. Evergreen, arching shrub. H 6ft (2m), S 10ft (3m). Leaves are oblong, leathery, glossy and dark green. Bears small flowers, with red calyces and purple anthers, in late spring–early summer. Z11

DOCYNIA

ROSACEAE

Genus of evergreen, semievergreen or deciduous trees and shrubs, grown for their flowers and foliage. Needs full sun and well-drained soil. Other than shaping while young, pruning is not necessary. Propagate by seed in spring or fall, by budding in summer, or by grafting in winter. Caterpillars may be troublesome.
D. delavayi. Evergreen or semievergreen, spreading tree. H and S 25ft (8m) or more. Ovate to lance-shaped leaves are white-felted beneath. In spring, has fragrant white flowers, pink in bud; ovoid, downy, yellow fruits follow in fall. Z8–10

DODECATHEON

Shooting stars

PRIMULACEAE

Genus of spring- and summer-flowering perennials, grown for their flowers, which have reflexed petals and prominent stamens. Once fertilized, flowers turn skyward—hence their common name. Dormant after flowering. Prefers sun or partial shade and moist, well-drained soil. Propagate by seed in fall or by division in winter.
D. dentatum. Clump-forming perennial. H 3in (7cm), S 10in (25cm). Leaves are long, ovate and toothed. Bears white flowers with prominent, dark stamens and reflexed petals, in spring. Prefers partial shade. Z4–8
D. hendersonii, syn. *D. latifolium,* illus. p.333.
D. latifolium. See *D. hendersonii*.
D. meadia. Clump-forming perennial. H 8in (20cm), S 6in (15cm). Leaves are ovate and pale green. In spring, bears pale pink flowers, with reflexed petals, above foliage. Prefers a partially shaded site. Z4–8. **f. *album*** illus. p.333.
D. pauciflorum of gardens. See *D. pulchellum*.
D. pulchellum, syn. *D. pauciflorum* of gardens. Clump-forming perennial. H 6in (15cm), S 4in (10cm). Similar to *D. meadia,* but flowers are usually deep cerise. Z4–7. **subsp. *pulchellum* 'Red Wings'** illus. p.333.

DODONAEA

SAPINDACEAE

Genus of evergreen shrubs and small trees, grown mainly for their foliage and overall appearance. Prefers full sun and well-drained soil. Water potted plants freely when in full growth, less at other times. Cut back in late summer and in spring if needed, to maintain a balanced shape. Propagate by seed in spring or by semiripe cuttings in late summer.
***D. viscosa* 'Purpurea'** illus. p.457.

Dolichos lablab. See *Lablab purpureus.*
Dolichos purpureus. See *Lablab purpureus.*

DOMBEYA

MALVACEAE

Genus of evergreen or deciduous shrubs and trees, grown for their flowers. Frost tender. Needs full sun or partial shade and fertile, well-drained soil. Water containerized plants freely when in full growth, less when temperatures fall. Cut back after flowering. Propagate by seed in spring or by semiripe cuttings in summer. Whitefly and red spider mite may be a nuisance.
D. burgessiae, syn. *D. mastersii*. Evergreen shrub. H 6–12ft (2–4m), S 5–10ft (1.5–3m). Has rounded, 3-lobed, downy leaves and dense clusters of fragrant, white flowers, with pink to red veins, in fall–winter. Z12–15 (min. 50°F/10°C)
D.* x *cayeuxii (Pink snowball) illus. p.450.
D. mastersii. See *D. burgessiae*.

Dondia. See *Hacquetia.*

DORONICUM

Leopard's bane

ASTERACEAE/COMPOSITAE

Genus of perennials, grown for their daisylike flowers, which are good for cutting. Most prefer full sun or part shade and moist, well-drained soil. Propagate by division in fall.
D. austriacum. Clump-forming perennial. H 18in (45cm), S 1ft (30cm). Bears daisylike, pure yellow flower heads on slender stems in spring, above heart-shaped, wavy-edged, bright green, hairy leaves. Z5–8
D. columnae, syn. *D. cordatum.* Clump-forming, rhizomatous perennial. H 5–24in (12–60cm), S 1ft (30cm). Bears clustered, ovate-rounded to heart-shaped, toothed, hairy or hairless, scalloped leaves. Slender stems bear solitary yellow flower heads in midspring to early summer. Z4–9
***D.* 'Miss Mason'** illus. p.227.
D. cordatum. See *D. columnae*.
***D.* x *excelsum* 'Harpur Crewe'**, syn. *D. plantagineum* 'Excelsum'. Elegant, clump-forming perennial. H 3ft (1m), S 2ft (60cm). Large, daisylike, buttercup-yellow flower heads are borne, 3 or 4 to a stem, in spring. Leaves are heart-shaped and bright green. Good for dry shade. Z4–8
***D.* 'Frühlingspracht'**, syn. *D. orientale* 'Frühlingspracht', *D. orientale* 'Spring Beauty'. Clump-forming perennial. H 18in (45cm), S 1ft (30cm). Produces daisylike, double, bright yellow flower heads in spring. Bears heart-shaped, bright green leaves. Z5–8
***D. orientale* 'Frühlingspracht'.** See *D.* 'Frühlingspracht'. **'Magnificum'** illus. p.263. **'Spring Beauty'** see *D.* 'Frühlingspracht'.
***D. plantagineum* 'Excelsum'.** See *D.* x *excelsum* 'Harpur Crewe'.

Dorotheanthus. See *Cleretum.*

DORYANTHES

DORYANTHACEAE/LILIACEAE

Genus of rosette-forming perennial succulents, grown for their flowers. Frost tender. Requires a sunny position and humus-rich, well-drained soil. Propagate by mature bulbils, by seed in spring, or by suckers after flowering.
D. palmeri illus. p.470.

Dorycnium hirsutum. See *Lotus hirsutus.*
Douglasia vitaliana. See *Vitaliana primuliflora.*
Doxantha. See *Macfadyena* except for: *D. capreolata* for which see *Bignonia capreolata*.

DRABA

BRASSICACEAE/CRUCIFERAE

Genus of spring-flowering annuals and evergreen or semievergreen, cushion- or mat-forming perennials. Some species form soft, green cushions that in winter turn brown except at the tips, appearing dead. Suitable for alpine houses. Needs sun and gritty, well-drained soil. Dislikes winter wet. Propagate by softwood cuttings of the rosettes in late spring or by seed in fall.
D. aizoides (Yellow whitlow grass). Semievergreen, mat-forming perennial. H 1in (25cm), S 6in (15cm). Has lance-shaped, stiff-bristled leaves in rosettes and, in spring, 4-petaled, bright yellow flowers. Suits a scree. Z4–6
D. bryoides. See *D. rigida* var. *bryoides*.
D. hispanica. Semievergreen, cushion-forming perennial. H 2in (5cm), S 4in (10cm). Pale green leaves are ovate and soft. Clusters of flat, 4-petaled, pale yellow flowers are borne in spring. Z4–6
D. longisiliqua illus. p.357.
D. mollissima illus. p.358.
D. polytricha. Semievergreen, cushion-forming perennial. H 2½in (6cm), S 6in (15cm). Forms rosettes of tiny round leaves. Bears flat, 4-petaled, golden-yellow flowers in spring. Difficult to grow. Keep stones under cushion at all times. Remove dead rosettes at once. Z4–6
D. rigida illus. p.357. **var. *bryoides*** (syn. *D. bryoides*) is an evergreen, hummock-forming perennial. H 1½in (4cm), S 2½in (6cm). Has tiny, round, dark green leaves. Produces small clusters of almost stemless, 4-petaled, bright yellow flowers that cover hummocks in spring. Z4–6

DRACAENA

ASPARAGACEAE

Genus of evergreen trees and shrubs, grown for their foliage. Frost tender. Needs full sun or partial shade and well-drained soil. Water potted plants moderately, much less in low temperatures. Renew leggy plants by cutting back close to soil level in spring. Propagate by seed or air-layering in spring, or by tip or stem cuttings in summer. Mealy bug may be a nuisance.
D. australis. See *Cordyline australis*.
D. deremensis. See *D. fragrans* Deremensis Group. **'Souvenir de Schrijver'** see *D. fragrans* Deremensis Group 'Souvenir d'August de Schrijver'.
D. draco illus. p.451.
D. fragrans (Corn plant). **Deremensis Group**, syn. *D. deremensis*, is a slow-growing sparsely branched shrub. H 6ft (2m) or more, S 3ft (1m) or more. Has lance-shaped, erect to arching, glossy, deep green leaves, to 18in (45cm) long. Mature plants may bear large panicles of small, red-and-white flowers in summer. Z14–15. **'Lemon Lime',** H 3–5ft (1–1.5m), S 20in–3ft (50cm–1m), has greenish-white flowers, occasionally followed by red or orange fruit. Leaves have longitudinal bands of greenish-yellow, white and dark green. **'Souvenir d'August de Schrijver'** (syn. *D. deremensis* 'Souvenir de Schrijver') illus. p.454.
D. indivisa. See *Cordyline indivisa*.
D. marginata (Madagascar dragon tree). Slow-growing, erect shrub or tree. H 10ft (3m) or more, S 3–6ft (1–2m) or more. Leaves are narrowly strap-shaped and rich green with red margins. Flowers are rarely produced. Z11–12. **'Tricolor'** illus. p.452. (min. 55°F/13°C)

DRACOCEPHALUM

Dragon's head

LAMIACEAE/LABIATAE

Genus of annuals, perennials and dwarf evergreen shrubs, suitable for borders and rock gardens. Prefers sun and fertile, well-drained soil. Propagate by seed or division in spring or fall, or by basal cuttings of young growth in spring.
D. ruyschiana. Erect perennial. H 18–24in (45–60cm), S 1ft (30cm). Freely bears whorled spikes of 2-lipped, violet-blue flowers from early to midsummer. Mid-green leaves are linear to lance-shaped. Z3–7
D. sibiricum. See *Nepeta sibirica*.

DRACUNCULUS

ARACEAE

Genus of tuberous perennials, grown for their distinctive, but foul-smelling, spathes. Where marginally hardy, protect dormant tubers with heavy mulch. Needs sun and well-drained soil that dries out in summer. Propagate by offsets in late summer or seed in fall.
D. vulgaris, syn. *Arum dracunculus* (Dragon's arum), illus. p.386.

DREGEA

APOCYNACEAE/ASCLEPIADACEAE

Genus of evergreen, woody-stemmed, twining climbers, grown for their flowers. Grow in sun and in any well-drained soil. Propagate by seed in spring or by stem cuttings in summer or fall.
D. corrugata. See *D. sinensis*.
D. sinensis, syn. *D. corrugata, Wattakaka sinensis*, illus. p.197.

Drejerella guttata. See *Justicia brandegeeana*.

Drepanostachyum falconeri. See *Himalayacalamus falconeri*.

DRIMIA

SYN. URGINEA

ASPARAGACEAE

Genus of late summer- or early fall-flowering bulbs, growing on or near soil surface, with spear-shaped flower spikes up to 5ft (1.5m) high. Needs sun and well-drained soil that dries out while bulbs are dormant in summer. Plant in mid- to late summer. Water until leaves die down. Propagate by seed in fall or by offsets in late summer.

D. maritima, syn. *Urginea maritima*. Late summer- or early fall-flowering bulb. H 5ft (1.5m), S 1–1½ft (30–45cm). Bears broadly sword-shaped, erect, basal leaves in fall, after long spikes of small star-shaped, white flowers. Z9–11

DRIMYS

WINTERACEAE

Genus of evergreen trees and shrubs, grown for their foliage and star-shaped flowers. Where marginally hardy, grow against a sunny wall. Needs sun or semishade and fertile, moist but well-drained soil. Propagate by semiripe cuttings in summer or by seed in fall.

D. aromatica. See *Tasmannia lanceolata*.

D. axillaris. See *Pseudowintera axillaris*.

D. colorata. See *Pseudowintera colorata*.

D. lanceolata. See *Tasmannia lanceolata*.

D. winteri, syn. *Wintera aromatica* (Winter's bark), illus. p.73.

DROSANTHEMUM

AIZOACEAE

Genus of erect or prostrate, succulent shrubs with slender stems and summer flowers. Frost tender. Requires full sun and very well-drained soil. Propagate by seed or by stem cuttings in spring or summer.

D. hispidum. Shrub with arching or spreading branches that root down. H 2ft (60cm), S 3ft (1m). Has cylindrical, light green leaves, ⅝–1in (1.5–2.5cm) long, and produces abundant, shiny, daisylike, purple flowers, to 1¼in (3cm) across in summer. Z10–13 (min. 41°F/5°C)

D. speciosum. Erect, shrubby succulent. H 2ft (60cm), S 3ft (1m). Has semicylindrical leaves, ½–¾in (1–2cm) long. Abundant, daisylike, green-centered, orange-red flowers, to 2in (5cm) across, are produced in summer. Z9–13 (min. 41°F/5°C)

DROSERA

Sundew

DROSERACEAE

Genus of evergreen or herbaceous, rosette-forming or scrambling, insectivorous perennials, and some annuals. Grow in sun, in a mixture of peat and moss that is not allowed to dry out. Propagate by seed or by division in spring.

D. capensis (Cape sundew) illus. p.473.

D. spatulata illus. p.473.

DRYANDRA

PROTEACEAE

Genus of evergreen, spring- to summer-flowering shrubs and small trees, grown for their foliage and flowers. Frost tender. Needs full light and well-drained, sandy soil that is low in nutrients. Water potted plants moderately, less in winter. Plants under glass must be freely ventilated. Propagate by seed in spring.

D. formosa. Evergreen, bushy shrub. H 6–15ft (2–5m), S 5–10ft (1.5–3m). Strap-shaped leaves are divided into triangular, closely set lobes, creating a saw-blade effect. In spring, produces small, scented, tubular, orange-yellow flowers in domed, terminal heads; suitable for drying. Z10–11

DRYAS

Mountain avens

ROSACEAE

Genus of evergreen, prostrate, woody-based subshrubs with oaklike leaves and cup-shaped flowers. Useful as a carpeting plant on banks and walls, in rock gardens and as groundcover. Prefers sun and gritty, well-drained, peaty soil. Propagate by seed or by semiripe cuttings in summer.

D. drummondii. Evergreen, mat-forming, woody-based subshrub. H 2in (5cm), S indefinite. Sturdy stems are clothed in small, ovate, lobed, leathery, dark green leaves. Bears nodding, bell-shaped, cream flowers in early summer. Z3–6

D. octopetala illus. p.361.

D. x suendermannii. Evergreen, mat-forming, woody-based subshrub. H 2in (5cm), S indefinite. Similar to *D. drummondii*, with scalloped leaves, but has slightly nodding, cup-shaped, pale cream flowers that open horizontally. Z3–6

DRYOPTERIS

DRYOPTERIDACEAE

Genus of deciduous or semievergreen ferns, many of which form shuttlecocklike crowns. Needs shade and moist soil. Regularly remove fading fronds. Propagate by spores in summer or by division in fall or winter.

D. affinis, syn. *D. borreri, D. pseudomas* (Golden male fern). Virtually evergreen fern. H and S to 3ft (1m). A "shuttlecock" of lance-shaped, divided fronds, 8–32in (20–80cm) tall, rises from an erect rhizome. Fronds are pale green as they unfurl in spring, in contrast to the scaly, golden brown midribs; they mature to dark green and often remain green through winter. Distinguished from *D. filix-mas* by a dark spot where each pinna joins the midrib. Z6–8

D. atrata of gardens. See *D. cycadina*.

D. austriaca. See *D. dilatata*.

D. borreri. See *D. affinis*.

D. carthusiana (Narrow buckler fern). Deciduous or semievergreen, creeping, rhizomatous fern. H 3ft (1m), S 18in (45cm). Lance-shaped, much-divided, mid-green fronds, to 2ft (60cm) long, have triangular to ovate pinnae. Z6–8

D. crassirhizoma (Thick-stemmed wood fern). Deciduous fern. H 3ft (90cm), S 28in (70cm). Has a short, sturdy rhizome producing a "shuttlecock" of initially erect, broadly lance-shaped, glossy, yellowish-green fronds, to 3ft (1m) long, with oblong, scallop-edged segments. An imposing fern suitable for a moist, shady site. Z5–9

D. cycadina, syn. *D. atrata* of gardens, *D. hirtipes* of gardens. Deciduous fern. H 2ft (60cm), S 18in (45cm). Has an erect rhizome bearing a "shuttlecock" of lance-shaped, divided, bright green fronds, 18in (45cm) tall, with green midribs. Z6–9

D. dilatata, syn. *D. austriaca* (Broad buckler fern). Deciduous or semievergreen fern. H 3ft (1m), S 18in (45cm). Has much-divided, arching, mid-green fronds, to 5ft (1.5m) tall and 16in (40cm) wide, with triangular to ovate pinnae, on sturdy, dark brown stems. Z6–8

D. erythrosora (Japanese shield fern) illus. p.293.

D. filix-mas (Male fern) illus. p.293. **'Crispa Cristata'** is a deciduous or semievergreen fern. H 2ft (60cm), S 3ft (1m), Has arching, crested, mid-green fronds and pinnae that are both crested and crisped. **'Linearis Polydactyla'**, H 30in (75cm), S 2ft (60cm), has blades and pinnae with narrow, long-fingered crests. Z4–8

D. goldieana (Giant wood fern). Deciduous fern. H 3ft (1m), S 2ft (60cm). Produces tufts of long-stalked, broadly ovate, light green fronds, 3ft (1m) tall, which are divided into numerous oblong, indented pinnae. Z6–8

D. hirtipes of gardens. See *D. cycadina*.

D. pseudomas. See *D. affinis*.

D. sieboldii. Semievergreen, tufted fern. H and S 1–2ft (30–60cm). Produces long-stalked, erect or arching, yellowish-green fronds, 8–20in (20–50cm) long, with up to 6 pairs of narrowly lance-shaped pinnae, 6–12in (15–30cm) long. Z6–8

D. wallichiana (Wallich's wood fern) illus. p.293.

DUCHESNEA

ROSACEAE

Genus of perennials, some of which are semievergreen, grown as groundcover as well as for their flowers. May be used in hanging baskets. Grow in well-drained soil and in sun or partial shade. Propagate by division in spring, by rooting plantlets formed at ends of runners in summer or by seed in fall. ***D. indica***, syn. *Fragaria indica*, *Potentilla indica*. Semievergreen, trailing perennial. H to 4in (10cm), S indefinite. Dark green leaves have 3 toothed leaflets like those of strawberries. Solitary, 5-petaled, bright yellow flowers, to 1in (25cm) across, with leafy, green frills of sepals, are borne from spring to early summer. Strawberrylike, tasteless, red fruits are produced in late summer. Z6–8. **'Harlequin'** has red-tinged foliage, speckled white.

DUDLEYA

CRASSULACEAE

Genus of basal-rosetted, perennial succulents, closely related to *Echeveria*. Frost tender. Needs full sun and very well-drained soil. Water sparingly when semidormant in midsummer. Propagate by seed or division in spring or summer.

D. brittonii. Basal-rosetted, perennial succulent. H 8–24in (20–60cm) or more when in flower, S 20in (50cm). Narrowly lance-shaped, tapering leaves are fleshy, silvery-white. Bears abundant, star-shaped, pale yellow flowers in spring-summer. Z13–15

D. pulverulenta illus. p.490.

DURANTA

VERBENACEAE

Genus of fast-growing, evergreen trees and shrubs, grown for their flowers and overall appearance. Frost tender. Needs full light and fertile, well-drained soil. Water potted plants freely when in full growth, moderately at other times. Prune as necessary to curb vigour. Propagate by seed in spring or by semiripe cuttings in summer. Whitefly may be troublesome.

D. erecta, syn. *D. plumieri, D. repens*, illus. p.319. **'Gold Edge'** illus. p.319.

D. plumieri. See *D. erecta*.

D. repens. See *D. erecta*.

DUVALIA

ASCLEPIADACEAE

Genus of clump-forming or carpeting, perennial succulents with short, thick, leafless stems; is closely related to *Stapelia*. Star-shaped flowers have thick, fleshy petals recurved at tips. Frost tender. Requires partial shade and very well-drained soil. Propagate by seed or stem cuttings in spring or summer.

D. corderoyi illus. p.493.

Duvernoia adhatodoides. See *Justicia adhatoda*.

DYCKIA

BROMELIACEAE

Genus of evergreen, rosette-forming perennials. Frost tender. Needs full light and well-drained soil containing sharp sand or grit. Water moderately in summer, scarcely or not at all in winter, sparingly at other times. Propagate by offsets or division in spring.

D. remotiflora. Evergreen, basal-rosetted perennial. H and S 12–20in (30–50cm). Has dense rosettes of very narrowly triangular, pointed, thick-textured, arching, dull green leaves with hooked spines and gray scales beneath. Woolly spikes of tubular, orange-yellow flowers are borne above the foliage in summer–fall. Z13–15 (min. 50°F/10°C)

DYPSIS

ARECACEAE/PALMAE

Genus of evergreen palms, grown for their elegant appearance. Frost tender. Needs full light or partial shade and fertile, well-drained soil. Water potted plants moderately, much less when temperatures are low. Propagate by seed in spring at not less than 79°F (26°C). Red spider mite may be a nuisance.

D. lutescens, syn. *Areca lutescens* of gardens, *Chrysalidocarpus lutescens* (Golden-feather palm, Yellow palm), illus. p.452.

Dysosma. See *Podophyllum*.

E

ECCREMOCARPUS

Chilean glory flower

BIGNONIACEAE

Genus of evergreen or herbaceous, subshrubby, tendril, climbing perennials grown for their flowers, which are borne over a long period. One species only is commonly grown. In cold-winter regions, treat as an annual. Grow in full sun and in any well-drained soil. Propagate by seed in late winter or early spring.

E. scaber (Chilean glory flower, Glory vine) illus. p.208.

ECHEVERIA

CRASSULACEAE

Genus of evergreen, often rosetted succulents and evergreen, occasionally deciduous subshrubs with long-lasting flowers. Leaves take on their brightest colors from fall to spring. Needs sun, good ventilation and very well-drained soil. Propagate by seed as soon as ripe, stem or leaf cuttings, division or offsets in spring.

***E. agavoides*.** Basal-rosetted, perennial succulent. H 6in (15cm), S 1ft (30cm). Has tapering, light green leaves, often with reddish-brown margins. Produces cup-shaped, yellow-tipped, red flowers, ⅝in (1.5cm) long, in summer. Z10–11

***E. cooperi*.** See *Adromischus cooperi*.

***E. derenbergii*.** Clump-forming, perennial succulent. H 4in (10cm), S 1ft (30cm). Produces a short-stemmed rosette or tuft of rounded, gray-green leaves. Flower stem, 4in (10cm) long, bears cup-shaped, yellow-and-red or orange flowers from late winter to early summer. Offsets freely. Often used as a parent in breeding. Z13–15

E. elegans illus. p.484.

***E.* x *fruticosa*.** See x *Pachyveria glauca*.

E. gibbiflora*.** Rosetted, perennial succulent. H 1ft (30cm), S 6in (15cm). Rosettes of spoon-shaped, pointed, wavy-margined, gray-green leaves, often tinged red-brown, are stemless or borne on short stems. Cup-shaped, pale red flowers, yellow within, are borne on stems, 3ft (1m) long, from late summer to winter. Z13–15. **var. *metallica (syn. *E.g.* 'Metallica') has white- or red-margined, purple-green leaves that mature to green-bronze.

E. harmsii, syn. *Oliveranthus elegans*. Bushy, perennial succulent. H and S 1ft (30cm). Erect stems are each crowned by a 2½in (6cm) wide rosette of short, narrowly lance-shaped, pale green, hairy leaves. In spring, bears urn-shaped, orange-tipped, red flowers, yellow within. Z13–15

***E. montana*.** Rosetted, perennial succulent. H 1ft (30cm), S 4in (10cm). Spoon-shaped, pointed, waxy-bloomed, light green leaves are produced in a small, short-stemmed, clustered rosette. Slender flower stem, 12–16in (30–40cm) long, bears cup-shaped, yellow to orange flowers in summer. Z13–15

E. pulvinata (Plush plant). Bushy, perennial succulent. H 1ft (30cm), S 20in (50cm). Has brown-haired stems topped by a rosette of thick, rounded, green leaves that become red-edged in fall. Leaves have short, white hairs. Bears red flowers from winter to early summer. Z12–15

E. secunda illus. p.487.

E. setosa (Mexican firecracker). Basal-rosetted, perennial succulent. H 1½in (4cm), S 1ft (30cm). Has long, narrow, mid-green leaves covered in short, thick, white hairs. Bears cup-shaped, red-and-yellow flowers from late spring to summer. Prone to rot: do not water foliage. Z13–15

ECHINACEA

Coneflower

ASTERACEAE/COMPOSITAE

Genus of summer-flowering perennials grown for their daisylike blooms. Prefers sun and humus-rich, moist but well-drained soil. Propagate by division or root cuttings in fall.

E. angustifolia (illus. p.221). Clump-forming perennial. H 4ft (1.2m), S 1½ft (45cm). Has narrowly lance-shaped, hairy, dark green leaves. In summer, upright stems bear solitary, daisylike flower heads with narrow, reflexed, pale pinkish-purple ray florets and a central, orange-brown cone. Needs an open position. Z4–9

***E.* 'Green Envy'.** Clump-forming, erect perennial. H 20in (50cm), S 10in (25cm). Has lance-shaped, mid-green leaves. In summer, upright stems bear solitary, daisylike, lime-green flower heads with a central, greenish-purple cone and rather broad, overlapping ray florets, which are pinkish-purple at the bases. Z4–9

***E.* 'Green Jewel'.** See *E. purpurea* 'Green Jewel'.

***E.* 'Harvest Moon'** (illus. p.221). Clump-forming, erect perennial. H to 2ft (60cm), S 1ft (30cm). Has lance-shaped, dark green leaves. In summer, upright often branched stems bear daisylike flower heads with rather reflexed, orange-tinged, soft yellow ray florets and a central, greenish-yellow cone. Z4–9

E. paradoxa (illus. p.221). Clump-forming perennial. H 3ft (1m), S 1ft (30cm) or more. Has narrowly lance-shaped, dark green leaves. In summer, upright stems bear solitary, daisylike, bright yellow flower heads with drooping, long, slender ray florets and a central, dark brown cone. Needs an open position. Z4–8

***E.* Pixie Meadowbrite ('CBG Cone 2').** Compact perennial. H 20in (50cm), S 1ft (30cm). Has lance-shaped, dark green leaves. In summer, sturdy, well-branched stems bear solitary, daisylike, bright pink flower heads with horizontal ray florets and a central, greenish-pink cone, which matures to crimson. Z4–9

E. purpurea, syn. *Rudbeckia purpurea*. Erect perennial. H 4ft (1.2m) or more, S 1½ft (45cm) or more. Has ovate, hairy, red-tinted, green, basal leaves. From midsummer to early fall, branching stems bear solitary, daisylike, purplish-red flower heads with partly reflexed ray florets and a central, golden brown cone. Best in an open position. Z3–9. **'Coconut Lime'** (illus. p.221), H to 2ft (60cm), has reflexed, white ray florets and a central cone that develops into a rounded pompom of shorter, green florets forming a shuttlecock-shaped head. **Doppelganger** see *E.p.* 'Doubledecker'. **'Doubledecker'** (syn. *E.p.* Doppelganger; illus. p.221), H 3ft (1m), has reflexed, magenta-pink ray florets and a central, dark brown cone, out of which develop more, smaller ray florets. **Elton Knight ('Elbrook')**, H 2ft (60cm), has a compact, bushy habit and produces numerous flower heads with horizontal, bright pink ray florets and a central, purplish-red cone. **'Fragrant Angel'** (illus. p.221), H 3ft (1m), bears fragrant flower heads with overlapping, horizontal, white ray florets, sometimes green tinged, and a central, orange cone. **'Green Jewel'** (syn. *E.* 'Green Jewel') H 2ft (60cm), S 1ft (30cm). Has lance-shaped leaves. In summer, upright stems bear soft-green flower heads with rather short, overlapping ray florets and a central, bright green cone. **'Kim's Knee High'**, H 2ft (60cm), has a compact habit and produces abundant, small, warm pink flower heads with reflexed ray florets and a central, dark bronze cone. **'Kim's Mop Head'**, H 20–24in (50–60cm), has a compact habit and produces near-horizontal, white ray florets and a central, greenish-orange cone. **'Magnus'** (illus. p.221), H 3ft (1m), produces large, deep purple flower heads with rather broad, overlapping, horizontal ray florets. **'Razzmatazz'** (illus. p.221), H 3ft (90cm), has soft pink flower heads, the central cone of which develops into a rounded pompom of shorter, reddish-pink ray florets. May need staking. **'Robert Bloom'** illus. p.234. **'Rubinstern'**, H 32in (80cm), bears large, reddish-pink flowers with horizontal ray florets and a central, brownish-red cone. **'Ruby Giant'**, H 34in (85cm), produces sturdy stems bearing rich pink flower heads with a second row of ray florets; these are held at the horizontal, giving flowers an impression of greater size than selections with drooping ray florets. **'Sundown'** (illus. p.221), H 32in (80cm), has a variable form and flower color, and bears usually overlapping, near-horizontal, warm orange ray florets and a central, dark orange cone. **'White Lustre'**, H 4ft (1.2m), has lance-shaped leaves and produces strong stems bearing white flower heads with a prominent, central orange-brown cone. **'White Swan'**, H to 2ft (60cm), bears rather reflexed, warm white ray florets and a central, orange-brown cone. ***E.* 'Tiki Torch'.** Clump-forming, erect perennial. H 28in (70cm), S 1ft (30cm). Has lance-shaped, dark green leaves. In summer, upright stems bear solitary, daisylike, bright orange flower heads with a central, reddish-brown cone and rather reflexed ray florets, which are darkest at the bases. Z4–9

***E.* 'Tomato Soup'.** Clump-forming, erect perennial. H 32in (80cm), S 1ft (30cm). Has lance-shaped, dark green leaves. In summer, upright stems bear daisylike, fiery orange-red flower heads with ray florets held more or less horizontally and a central, greenish-brown cone. Z4–9

ECHINOCACTUS

CACTACEAE

Genus of slow-growing, spherical, barrel-shaped, or columnar, perennial cacti. Frost tender; lower temperatures cause yellow patches on *E. grusonii*. Requires full sun and very well-drained soil. Yellow-flowered species are easy to grow. Propagate by seed in spring.

***E. asterias*.** See *Astrophytum asterias*.

***E. chilensis*.** See *Eriosyce chilensis*.

***E. eyriesii*.** See *Echinopsis oxygona*.

E. grusonii (Golden barrel cactus, Mother-in-law's cushion). Slow-growing, hemispherical, perennial cactus. H to 2ft (60cm) S to 32in (80cm). Spined, green stem has 20–40 ribs. Woolly crown bears a ring of straw-colored flowers in summer, only on stems over 15in (38cm) wide. Z9–10 (min. 50°F/10°C)

***E. ingens*.** See *E. platyacanthus*.

***E. myriostigma*.** See *Astrophytum myriostigma*.

***E. ornatus*.** See *Astrophytum ornatum*.

E. platyacanthus, syn. *E. ingens*. Slow-growing, hemispherical, perennial cactus. H and S to 10ft (3m). Fresh green stem has a woolly crown and 20–60 ribs. Funnel-shaped, yellow flowers, 1¼in (3cm) or more across, are produced in summer only on plants over 16in (40cm) in diameter. Z12–15 (min. 50°F/10°C)

***E. scheeri*.** See *Sclerocactus scheeri*.

***E. uncinatus*.** See *Sclerocactus uncinatus*.

ECHINOCEREUS

CACTACEAE

Genus of spherical to columnar, perennial cacti, freely branching with age, some with tuberous rootstocks. Buds, formed inside the spiny stems, burst through the skins to produce long-lasting flowers, with reflexed petal tips and prominent, green stigmas, followed by pear-shaped, spiny seed pods. Frost tender; some species tolerate light frost if dry. Needs full sun and very well-drained soil. Propagate by seed or stem cuttings in spring or summer.

***E. baileyi*.** See *E. reichenbachii* var. *baileyi*.

***E. cinerascens*.** Clump-forming cactus. H 4–24in (10–60cm), S 3ft (1m). Has up to 3in (7cm) wide stems, each with 5–12 ribs. Areoles each bear 8–15 yellowish-white or red spines. Mature plants bear abundant, trumpet-shaped, bright pink or purple flowers, 2½–4in (6–10cm) across, with paler petal bases, in early summer. Z12–15 (min. 45°F/7°C)

E. leucanthus, syn. *Wilcoxia albiflora*, illus. p.482.

***E. pectinatus*.** Columnar cactus. H 14in (35cm), S 8in (20cm). Sometimes develops sparsely branched, green stems with 12–23 ribs and short, comblike spines, often variably colored. Trumpet-shaped, pink, purple or yellow flowers, 3–5in (7–12cm) across, with paler bases, are borne in late spring to early summer. Z12–15 (min. 45°F/7°C)

E. pentalophus, syn. *E. procumbens*, illus. p.484.

***E. procumbens*.** See *E. pentalophus*.

E. reichenbachii*.** Variable, spherical to columnar cactus. H to 14in (35cm), S 8in (20cm). Slightly branched, multi-colored stem with up to 19 ribs has comblike spines, ⅝in (1.5cm) long. Trumpet-shaped, pink or purple flowers, 3in (7cm) across, with darker petal bases, are borne from spring to early summer. Z13–15 (min. 41°F/5°C) **var. *baileyi (syn. *E. baileyi*) illus. p.484.

E. schmollii, syn. *Wilcoxia schmollii* (Lamb's-tail cactus), illus. p.492.

***E. triglochidiatus*.** Very variable, simple, erect or clump-forming, perennial cactus. H 1ft (30cm), S 6in (15cm). Has a short, thick, dark green stem with 3–16 spines,

each to 1in (25cm) long, per areole. From spring to early summer, bears funnel-shaped, bright red flowers, 3in (7cm) across, with prominent, red stamens and green stigmas. Z11–12. (min. 45°F/7°C) **var. paucispinus** illus. p.496.

Echinofossulocactus. See *Stenocactus.*
Echinomastus macdowellii. See *Thelocactus macdowellii.*

ECHINOPS

Globe thistle

ASTERACEAE/COMPOSITAE

Genus of annuals, biennials and perennials, grown for their globelike, spiky flower heads. Does best in full sun and in poor soil. Propagate by division or seed in fall, or by root cuttings in winter. Flower heads dry well.
E. bannaticus. Upright, clump-forming perennial. H 4–5ft (1.2–1.5m), S 2ft (60cm). Has narrow, deeply cut leaves and pale to mid-blue heads of spherical flowers, borne on branching stems in late summer.Z5–9. **'Taplow Blue'** illus p. 241.
***E. ritro* 'Veitch's Blue'.** Upright perennial. H to 3ft (90cm), S 18in (45cm). Sharply divided, dark green leaves are downy beneath. Round, thistlelike, purplish-blue heads of flowers are borne on silvery stems in late summer. Z3–9
E. sphaerocephalus. Massive, bushy perennial. H 6ft (2m), S 3ft (1m). Has deeply cut, mid-green leaves, pale gray beneath. Gray stems bear round, grayish-white flower heads in mid- to late summer. Z3–9

ECHINOPSIS

SYN. LOBIVIA, TRICHOCEREUS

CACTACEAE

Genus of spherical to columnar, perennial cacti, mostly freely branching; sometimes held to include *Trichocereus.* Requires full sun and well-drained soil. Propagate by seed or offsets in spring or summer.
E. aurea, syn. *Lobivia aurea, L. cylindrica, Pseudolobivia aurea,* illus p.495.
E. backebergii, syn. *Lobivia backebergii*, illus. p.491.
E. candicans, syn. *Trichocereus candicans*, illus. p.492.
E. chamaecereus, syn. *Cereus silvestrii, Chamaecereus silvestrii, Lobivia silvestrii* (Peanut cactus), illus. p.486.
E. cinnabarina, syn. *Lobivia cinnabarina.* Spherical, perennial cactus. H and S 6in (15cm). Glossy, dark green stem has about 20 warty ribs and mostly curved, dark spines. In summer bears funnel-shaped to flattish, carmine-red flowers, 3in (8cm) across. Z13–15
E. eyriesii. See *E. oxygona.*
E. lageniformis, syn. *Trichocereus bridgesii*, illus. p.489.
E. marsoneri, syn. *Lobivia haageana*, illus. p.491.
E. multiplex. See *E. oxygona.*
E. oxygona, syn. *E. eyriesii, E. multiplex, Echinocactus eyriesii*, illus. p.481.
E. pentlandii, syn. *Lobivia pentlandii*, illus. p.491.
E. rhodotricha. Spherical to columnar, perennial cactus. H 2ft (60cm), S 8in (20cm). Produces branching, dark green stems, 3½in (9cm) across, with 8–13 ribs. Curved, dark spines, ¾in (2cm) long, later turn pale. Has tubular, white to pink flowers in spring–summer. Z13–15
E. spachiana, syn. *Cereus spachianus, Trichocereus spachianus* (Torch cactus), illus. p.492.

Echioides longiflorum. See *Arnebia pulchra.*

ECHIUM

BORAGINACEAE

Genus of annuals and evergreen shrubs, biennials and perennials, grown for their flowers, borne mainly in summer. Requires full sun and fertile, well-drained soil. Water containerized specimens freely in summer, moderately at other times. Propagate by seed in spring or by greenwood or semiripe cuttings in summer. Whitefly may sometimes be troublesome. ⓘ All parts may cause mild stomach upset if ingested; contact with the foliage may irritate skin.
E. bourgaeanum. See *E. wildpretii.*
E. candicans, syn. *E. fastuosum* (Pride of Madeira). Open, usually rounded, woody-based biennial. H 5–8ft (1.5–2.5m), S 5–6ft (1.5–2m). Has rosettes of lance-shaped, white-downy leaves, 6–10in (15–25cm) long. Narrowly funnel-shaped, white, blue-white, or deep purple-blue flowers, are borne in dense flower spikes, to 1ft (30cm) long, from spring to summer. Z10–11 (min. 41–45°F/5–7°C)
E. fastuosum see *E. candicans.*
E. pininana, syn. *E. pinnifolium*. Biennial or short-lived perennial. H to 12ft (4m), S 3ft (90cm). Rosettes have lance-shaped, silver-hairy leaves, to 3in (7cm) long. Each rosette bears a 5–12ft (1.5–4m) long spike of funnel-shaped, blue flowers with large bracts in mid- and late summer. Z8–11. **'Snow Tower'** has white flowers.
E. pinnifolium. See *E. pininana.*
E. vulgare (Viper's bugloss). Moderately fast-growing, erect, bushy annual or biennial. H 1ft (30cm), S 8in (20cm). Has lance-shaped, dark green leaves. Spikes of tubular flowers, in white, pink, blue or purple, are produced in summer. Z3–8
E. wildpretii, syn. *E. bourgaeanum.* Evergreen, woody-stemmed, unbranched, erect, biennial or short-lived perennial that dies after fruiting. H 8ft (2.5m) or more, S 2ft (60cm). Narrowly lance-shaped, silver-haired leaves, 1ft (30cm) long, form a dense rosette. Has compact spires, 3–5ft (1–1.5m) long, of small, funnel-shaped, red flowers in late spring and early summer. Z9–10

EDGEWORTHIA

Paper bush

THYMELAEACEAE

Genus of deciduous or evergreen shrubs, grown for their flowers in late winter and early spring. Flowers are susceptible to frost. Best grown against a south- or west-facing wall in most areas. Requires full sun and well-drained soil. Dislikes being transplanted. Take semiripe cuttings in summer or propagate by seed in fall.
E. chrysantha, syn. *E. papyrifera,* illus. p.126.
E. papyrifera. See *E. chrysantha.*

EDRAIANTHUS

Grassy bells

CAMPANULACEAE

Genus of short-lived perennials, some evergreen; sometimes included in *Wahlenbergia*. In winter, a small bud is just visible from each rootstock. In spring, prostrate stems radiate to bear leaves and flowers. Suitable for rock gardens, screes and troughs. Needs sun and well-drained soil. Propagate by softwood cuttings from side shoots in early summer or by seed in fall.
E. dalmaticus. Upright, then arching perennial. H 4in (10cm), S 6in (15cm). Bears narrowly lance-shaped, pale green leaves and, in early summer, terminal clusters of bell-shaped, violet-blue flowers, 1in (25cm) across. Z8–9
E. pumilio, syn. *Wahlenbergia pumilo*, illus. p.368.
E. serpyllifolius, syn. *Wahlenbergia serpyllifolia*, illus. p.367. **'Major'** is an evergreen, prostrate perennial. H ½in (1cm), S to 2in (5cm). Produces tight mats of tiny, ovate, dark green leaves and bell-shaped, deep violet flowers, ⅝in (1.5cm) across, on very short stems, in early summer. Needs a sheltered site. Seldom sets seed. Z4–9

EHRETIA

BORAGINACEAE

Genus of deciduous and evergreen shrubs and trees, grown for their foliage and star-shaped flowers. Susceptible to frost damage when young. Requires sun or semishade and fertile, well-drained soil. Propagate by softwood cuttings in summer.
E. dicksonii illus. p.88.

ELAEAGNUS

ELAEAGNACEAE

Genus of deciduous or evergreen shrubs and trees, grown for their foliage and small, usually fragrant flowers, and ornamental fruits. Evergreens provide good shelter belts or hedging, particularly in coastal areas. Most evergreen species thrive in sun or shade, but silver-leaved and deciduous species prefer full sun. Requires fertile, well-drained soil. Trim hedges in late summer. Propagate by seed in fall, evergreen forms also by semiripe cuttings in summer, deciduous forms by softwood or semiripe cuttings in summer.
E. angustifolia (Oleaster) illus. p.116.
E.* x *ebbingei. See *E.* x *submacrophylla*.
E. macrophylla. Evergreen, bushy, dense shrub. H and S 10ft (3m). Broadly ovate leaves are silvery-gray when young, becoming glossy and dark green above, but remaining silvery-gray beneath, when mature. Fragrant, bell-shaped, creamy-yellow flowers, silvery outside, are borne from mid- to late fall, followed by egg-shaped, red fruits. Z7–9
***E. pungens* 'Maculata'**, syn. *E. pungens* 'Aureovariegata', illus. p.119.
E.* x *submacrophylla, syn. *E.* x *ebbingei.* Evergreen, bushy, dense shrub. H and S 15ft (5m). Has oblong to ovate, glossy, dark green leaves, silvery beneath. Bears fragrant, bell-shaped, silvery-white flowers from mid- to late fall. Z6–10. **'Gilt Edge'** has eaves with golden-yellow margins. **'Limelight'** illus. p.139.
E. umbellata illus. p.113.

ELAEOCARPUS

ELAEOCARPACEAE

Genus of evergreen, spring- and summer-flowering shrubs and trees, grown for their flowers and foliage. Requires full sun or partial shade and fertile, well-drained but not dry soil. Water containerized plants freely when in growth, less in winter. Current season's growth may be cut back in winter. Propagate by seed in spring or by semiripe cuttings in summer. Red spider mite and whitefly may cause problems.
E. cyaneus, syn. *E. reticulatus* (Blueberry ash). Evergreen, rounded shrub or tree. H and S 10ft (3m), sometimes to 40ft (12m) or more. Frost tender. Bears elliptic to lance-shaped, toothed, lustrous leaves and, in summer, bell-shaped, fringed, white flowers, and globular, blue fruits in fall. Z14–15 (min. 41°F/5°C)
E. reticulatus. See *E. cyaneus.*

ELEOCHARIS

CYPERACEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
E. acicularis (Needle spike-rush). Evergreen, rhizomatous, perennial sedge. H to 4in (10cm), S indefinite. Basal, mid-green leaves are very narrow. Hairless, unbranched, square stems bear solitary tiny brown spikelets in summer. Z9–11

ELEUTHEROCOCCUS

SYN. ACANTHOPANAX

ARALIACEAE

Genus of deciduous shrubs, trees, and sometimes climbers, grown for their foliage and fruits. Produces tiny, usually gree nish-white flowers. Prefers full sun and needs well-drained soil. Propagate by seed in spring or by root cuttings in late winter.
E. sieboldianus, syn. *Acanthopanax sieboldianus*, illus. p.138.

Elliottia paniculata. See *Tripetaleia paniculata.*

ELSHOLTZIA

LAMIACEAE/LABIATAE

Genus of annuals, perennials and semi-evergreen or deciduous shrubs and subshrubs, grown for their flowers. Needs full sun and fertile, well-drained soil. Cut back old shoots hard in early spring. Propagate by softwood cuttings in summer.
E. stauntonii. Deciduous, open subshrub. H and S 5ft (1.5m). Sharply toothed, mint-scented, dark green leaves turn red in fall. Slender spires of pale purple blooms are produced in late summer–fall. Z5–8

Elymus arenarius. See *Leymus arenarius.*

EMBOTHRIUM
Chilean fire bush

PROTEACEAE

Genus of evergreen trees, grown for their flowers. Needs semishade and moist but well-drained, neutral to acidic soil. Propagate by suckers in spring or fall or by seed in fall.

E. coccineum (Chilean fire bush) illus. p.86.

EMILIA
Tassel flower

ASTERACEAE/COMPOSITAE

Genus of annuals with flowers that are good for cutting. Ideal for hot, dry areas and coastal soils. Requires sun and very well-drained soil. Propagate by seed sown under glass in spring, or sown outdoors in late spring.

E. coccinea, syn. *E. flammea, E. javanica* of gardens (Flora's paintbrush), illus. p.327.

E. flammea. See *E. coccinea.*

E. javanica of gardens. See *E. coccinea.*

EMMENOPTERYS

RUBIACEAE

Genus of deciduous trees, grown for their foliage; flowers are only produced in hot summers. Young plants may be damaged by late frost. Needs full sun and deep, fertile, well-drained soil. Propagate by softwood cuttings in summer.

E. henryi illus. p.75.

ENCEPHALARTOS

ZAMIACEAE

Genus of evergreen cycads, some palmlike, other with a short or buried stem. Frost tender. Needs full sun and well-drained soil. Water containerized plants moderately when in full growth, less at other times. Propagate by seed in spring.

E. ferox illus. p.457.

E. longifolius (Suurberg cycad). Slow-growing, palmlike cycad, sometimes branched with age. H 10ft (3m) or more, S 5–12ft (1.5–3.5m). Has feather-shaped leaves, each 2–5ft (60cm–1.5m) long, divided into narrowly lance-shaped to ovate, blue-green leaflets, usually with hook-tipped teeth. Conelike, brown flower heads are borne intermittently. Z11–12 (min. 55°F/13°C)

Encyclia cochleata. See *Prosthechea cochleata.*

Encyclia radiata. See *Prosthechea radiata.*

Endymion. See *Hyacinthoides.*

ENKIANTHUS

ERICACEAE

Genus of mainly deciduous, sometimes semievergreen, spring-flowering shrubs and trees, grown for their abundant, small, bell- or urn-shaped flowers and their fall color. Needs sun or semishade and moist, peaty, acidic soil. Propagate by semiripe cuttings in summer or by seed in fall.

E. campanulatus illus. p.111.

E. cernuus* f. *rubens illus. p.123.

E. perulatus illus. p.120.

ENSETE

MUSACEAE

Genus of evergreen perennials, grown for their bananalike foliage and fruits (though fruits are unpalatable). Their false stems, made of overlapping leaf sheaths, die after flowering. Frost tender. Grow in sun or partial shade and humus-rich soil. Sow seed in spring or divide year-round.

E. ventricosum, syn. *Musa arnoldiana, M. ensete* (Abyssinian banana, Ethiopian banana), illus. p.474.

EOMECON
Snow poppy

PAPAVERACEAE

Genus of one species of rhizomatous perennial, grown for its nodding, poppylike flowers. Use as groundcover, in a shrub border or large rock garden. Needs sun and well-drained soil. Propagate by seed or runners in spring.

E. chionantha. Vigorous, spreading perennial. H to 16in (40cm), S indefinite. Leaves are large, gray, and heart- to kidney- or arrow-shaped. Erect stems bear long panicles of small, poppylike, white summer flowers. Z7–9

EPACRIS

ERICACEAE/EPACRIDACEAE

Genus of evergreen, heatherlike shrubs, grown for their flowers. Needs full sun and humus-rich, well-drained, neutral to acidic soil. Water potted plants moderately when in full growth, less at other times. Cut back flowered stems after flowering to maintain a neat habit. Propagate by seed in spring or semiripe cuttings in late summer.

E. impressa (Common Australian heath) illus. p.455.

EPHEDRA

EPHEDRACEAE

Genus of evergreen shrubs, occasionally climbers, grown for their habit and green shoots. Provides good groundcover in dry soil. Grow male and female plants together in order to obtain fruits. Requires full sun and well-drained soil. Propagate by seed in fall or division in fall or spring.

E. gerardiana. Evergreen, spreading shrub with slender, erect, rushlike, green shoots. H 2ft (60cm), S 10ft (3m). Leaves and flowers are inconspicuous. Bears small, spherical, red fruits. Z5–9

EPIDENDRUM

ORCHIDACEAE

See also ORCHIDS.

E. difforme. Evergreen, epiphytic orchid for an intermediate greenhouse. H 14in (35cm), S 1ft (30cm). Large heads of semitranslucent, greenish flowers, ¼in (0.5cm) across, open in fall. Has ovate, rigid leaves, to 4½in (11cm) long. Requires shade in summer. Avoid spraying, which can cause spotting of leaves. Propagate by division in spring. Z14–15 (min. 55°F/13°C, max. 86°F/30°C)

E. ibaguense, syn. *E. radicans.* Evergreen, epiphytic orchid for a cool greenhouse. H 6ft (2m) or more, S 3ft (1m). Bears a constant succession of feathery-lipped, deep red blooms, 1½in (4cm) across. Leaves, 6in (15cm) long, are ovate and rigid. Grow in semishade in summer. Propagate by tip cuttings in spring. Z14 (min. 55°F/13°C, max. 86°F/30°C)

E. radicans. See *E. ibaguense.*

EPIGAEA
SYN. ORPHANIDESIA

ERICACEAE

Genus of evergreen, prostrate, spring-flowering shrubs and subshrubs. Needs shade and humus-rich, moist, acidic soil. Most are difficult to cultivate. Propagate by seed in spring or by softwood cuttings in early summer.

E. asiatica. Creeping, stem-rooting subshrub. H to 4in (10cm), S to 8in (20cm). Stems and heart-shaped, deep green leaves are covered with brown hairs. Bears clusters of 3–6 tiny, slightly fragrant, tubular- to bell-shaped, white or pink flowers in spring. Z5–7

E. gaultherioides, syn. *Orphanidesia gaultherioides,* illus. p.351.

E. repens (Mayflower, Trailing arbutus). Creeping subshrub. H 4in (10cm), S 1ft (30cm). Hairy stems, bearing heart-shaped, leathery leaves, root at intervals. In spring, produces terminal clusters of 4–6 cup-shaped, white flowers, sometimes flushed pink. Relatively easy to grow. Z3–9

EPILOBIUM
Willow herb

ONAGRACEAE

Genus of annuals, biennials, deciduous or semievergreen, sometimes stoloniferous, perennials and semievergreen subshrubs, grown for their deep pink to white flowers in summer. Useful on dry banks; but many species are invasive. Tolerates sun or shade and prefers moist but well-drained soil. Propagate species by seed in fall, selected forms in spring by softwood cuttings from side-shoots.

E. angustifolium* f. *leucanthum. See *Chamaenerion angustifolium* 'Album'.

E. californicum. See *Zauschneria californica.*

E. canum. See *Zauschneria californica* subsp. *cana.*

E. chlorifolium* var. *kaikourense. Clump-forming, deciduous, woody-based perennial. H 1ft (30cm), S 6in (15cm). Has persistent, ovate, hairy, bronze and dark green leaves. In summer, bears short spikes of funnel-shaped, white to pink flowers. Z4–6

E. glabellum of gardens illus. p.360.

E. obcordatum. Clump-forming perennial. H 6in (15cm), S 4in (10cm). Ovate leaves are glossy green. Spikes of open cup-shaped, deep rose-pink flowers are borne in summer. Good for a rock garden or alpine house. Requires a sheltered position and full sun. In cultivation may not retain character, especially in mild climates. Z5–8

E. septentrionale. See *Zauschneria septentrionalis.*

EPIMEDIUM
Barrenwort

BERBERIDACEAE

Genus of spring-flowering perennials, some of which are evergreen. Flowers are mainly saucer- to cup-shaped with long or short spurs. Provides good groundcover. Does best in partial shade and humus-rich, moist but well-drained soil. Cut back just before new growth emerges in spring. Propagate by division in spring or fall.

E. alpinum. Deciduous, clump-forming perennial. H 9in (23cm), S to 1ft (30cm). Racemes of pendent, short-spurred flowers, with crimson sepals and yellow petals, are borne in spring. Finely toothed, divided leaves have ovate, angled, glossy, mid-green leaflets, bronze when young. Z4–9

***E.* 'Amber Queen'** illus. p.263.

E. davidii. Vigorous, evergreen, groundcover perennial. H 1ft (30cm), S 16in (40cm). Dainty, mid-green leaves are tinged bronze when young and divided into rounded, heart-shaped, toothed leaflets. Bears clusters of pendent, long-spurred, butter-yellow flowers in spring. Z5–9

E. epsteinii illus. p.260.

E. grandiflorum, syn. *E. macranthum.* Clump-forming perennial. H and S 1ft (30cm). Has heart-shaped, light green leaves, divided into ovate leaflets, flushed bronze when young. Bears racemes of pendent, long-spurred, white, yellow, pink or purple flowers, in spring. Z4–8.

'Crimson Beauty' has copper marks on young leaves and copper-crimson flowers. **'Rose Queen'** has wiry stems bearing clusters of cup-shaped, deep pink flowers, with white-tipped spurs. ***f. violaceum*** has young leaves that are flushed bronze and produces purple-and-white flowers.

E. macranthum. See *E. grandiflorum.*

E.* x *perralchicum. Evergreen, carpeting perennial. H 18in (45cm), S 2ft (60cm). Short spires of pendent, yellow flowers, with short spurs, are borne in spring. Leaves, divided into rounded to ovate leaflets, are dark green. Z5–8

E. perralderianum. Semievergreen, carpeting perennial. H 1ft (30cm), S 2ft (60cm). Clusters of small, pendent, short-spurred, bright yellow flowers are borne in spring. Produces large, toothed, glossy, deep green leaves, divided into rounded to ovate leaflets. Z5–8

E. pinnatum* subsp. *colchicum. Evergreen, carpeting perennial. H and S 1ft (30cm). In spring, bears clusters of small, pendent, bright yellow flowers, with short spurs, above dark green leaves, hairy when young, divided into ovate leaflets. Z5–9

E. pubigerum. Evergreen, clump-forming perennial. H and S 18in (45cm). Grown for its dense, smooth, heart-shaped, divided foliage and clusters of cup-shaped, creamy-white, sometimes yellowish-white, flowers in spring. Z5–9

E.* x *rubrum illus. p.260.

E.* x *versicolor. Evergreen, clump-forming perennial. H and S 1ft (30cm). Small, pendent clusters of yellow flowers, with long, red-tinged spurs, are produced in spring. Heart-shaped, fresh green

leaves are divided into ovate leaflets that are tinted reddish-purple. Z5–9.
'Neosulfureum' illus. p.262.

E.* x *warleyense illus. p.263.
***E.* x *youngianum* 'Niveum'** illus. p.254.

EPIPHYLLUM
Orchid cactus
CACTACEAE

Genus of mostly epiphytic, perennial cacti with strap-shaped, flattened, green stems that have notched edges. Flowers are produced at notches. Frost tender. Grow in sun or partial shade and in rich, well-drained soil. Propagate by stem cuttings in spring or summer.
E. ackermannii. See *Disocactus ackermannii*.
E. anguliger (Fishbone cactus) illus. p.494.
E. crenatum. Erect, then pendent, semiepiphytic cactus. H and S 10ft (3m). Has a flattened stem. Produces lightly perfumed, funnel-shaped, broad-petaled, white flowers, 8in (20cm) across, in spring–summer. Often used as a parent for breeding. Z11–12 (min. 50–59°F/10–15°C)
E. laui illus. p.482.
E. oxypetalum. Erect, then pendent, epiphytic cactus. H 10ft (3m), S 3ft (1m). Produces freely branching, flattened stems, 5in (12cm) across. In spring–summer, bears nocturnal, tubular, white flowers, 10in (25cm) long. A good houseplant. Z11–12 (min. 50–59°F/10–15°C)

EPIPREMNUM
ARACEAE

Genus of evergreen, woody-stemmed, root-clinging climbers, grown for their handsome leaves. Frost tender. Grow in light shade away from direct sun; any well-drained, moisture-retentive soil is suitable. Water regularly, less in cold weather. Stems need good supports. Remove shoot tips to induce branching at any time. Propagate by leaf-bud or stem-tip cuttings in late spring or by layering in summer. ⓘ All parts may cause severe discomfort if ingested, and contact with the sap of *E. aureum* may irritate skin.
***E. aureum* 'Marble Queen'**, syn. *E. pinnatum* 'Aureum' of gardens, *Scindapsus aureus* 'Marble Queen' (Devil's ivy), illus. p.460.
***E. pictum* 'Argyraeum'.** See *Scindapsus pictus* 'Argyraeus'.
***E. pinnatum* 'Aureum'** of gardens. See *E. aureum* 'Marble Queen'.

EPISCIA
SYN. ALSOBIA
Carpet plant, Flame violet
GESNERIACEAE

Genus of evergreen, low-growing and creeping, epiphytic or terrestrial, stoloniferous perennials, grown for their ornamental leaves and colorful flowers. Useful as groundcover or in hanging baskets. Frost tender. Requires high humidity, a shaded site and humus-rich, well-drained soil. Keep well watered, but avoid waterlogging. Propagate in summer by stem cuttings, division or removing rooted runners.
E. cupreata (Flame violet) illus. p.471.
'Metallica' is an evergreen, creeping perennial. H 4in (10cm), S indefinite. Has ovate, downy, wrinkled leaves, tinged pink to copper and with broad, silvery bands along midribs. Funnel-shaped, orange-red flowers, marked yellow within, are borne intermittently. **'Tropical Topaz'** has yellow flowers and pale green leaves. Z14–15 (min. 59°F/15°C)
E. dianthiflora, syn. *Alsobia dianthiflora* (Lace flower), illus. p.465.
E. lilacina. Evergreen, low-growing, terrestrial or epiphytic perennial, with runners bearing plantlets. H 4in (10cm), S indefinite. Has ovate, hairy, pale green leaves, to 3in (8cm) long. Bears funnel-shaped, white flowers, tinged mauve and with yellow eyes, in small clusters from fall to spring. Z11–12. (min. 59°F/15°C) Leaves of **'Cuprea'** are bronze-tinged.

EPITHELANTHA
CACTACEAE

Genus of very slow-growing, spherical, perennial cacti densely covered with very short spines. Frost tender. Needs full sun and well-drained soil; prone to rotting if overwatered. Propagate by grafting, seed or stem cuttings in spring or summer.
E. micromeris illus. p.493.

ERAGROSTIS
Love grass
POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
***E. curvula* 'Totnes Burgundy'** illus. p.285.

ERANTHEMUM
ACANTHACEAE

Genus of woody-based perennials and evergreen shrubs, grown for their flowers. Frost tender. Requires full light or partial shade and fertile, well-drained soil. Water containerized plants freely when in full growth, moderately at other times. In spring or after flowering, remove at least half of each spent flowering stem to encourage a bushier habit. Propagate by softwood cuttings in late spring. Whitefly may be a nuisance.
E. atropurpureum. See *Pseuderanthemum atropurpureum.*
E. nervosum. See *E. pulchellum.*
E. pulchellum, syn. *E. nervosum* (Blue sage). Evergreen, erect shrub. H 3–4ft (1–1.2m), S 2ft (60cm) or more. Has elliptic to ovate, prominently veined, deep green leaves. Bears blue flowers, each with a 1¼in (3cm) long tube and rounded petal lobes, in winter–spring. Z13–15 (min. 55°F/13°C)

ERANTHIS
Winter aconite
RANUNCULACEAE

Genus of small clump-forming perennials, with knobbly tubers, grown for their cup-shaped flowers surrounded by leaflike ruffs of bracts. Prefers partial shade and humus-rich soil, well-drained but not drying out excessively. Dies down in summer. Propagate by seed in fall or by division of clumps immediately after flowering while still in leaf. ⓘ All parts may cause mild stomach upset if ingested, and contact with the sap may irritate skin.
E. hyemalis (Winter aconite) illus. p.429.
Tubergenii Group 'Guinea Gold' (syn. *E.* x *tubergenii* 'Guinea Gold') is a late winter- or early spring-flowering, tuberous perennial. H 3–4in (8–10cm), S 1½–2½in (4–6cm). Each stem bears a stalkless, deep golden-yellow flower, 1¼–1½in (3–4cm) across, surrounded by a bronze-green bract, cut into narrow lobes. Rounded leaves have finger-shaped lobes. Z4–9
***E.* x *tubergenii* 'Guinea Gold'.** See *E. hyemalis* Tubergenii Group 'Guinea Gold'.

ERCILLA
PHYTOLACCACEAE

Genus of evergreen root climbers, grown for their neat, green leaves and green and purple flower spikes. Grow in sun or partial shade and in any well-drained soil. Prune after flowering, if required. Propagate by stem cuttings in late summer or fall.
E. spicata. See *E. volubilis.*
E. volubilis, syn. *Bridgesia spicata*, *E. spicata*, illus. p.192.

EREMURUS
Desert candle, Foxtail lily
ASPHODELACEAE/LILIACEAE

Genus of perennials with fleshy, fingerlike roots, grown for their stately spires of shallowly cup-shaped flowers in summer. Needs a sunny, warm position and well-drained soil. Tends to come into growth very early, and young shoots may be frosted. Cover with dry bracken in late winter to protect the crowns when shoots are first developing. Stake tall species and hybrids. Propagate by division in spring or early fall or by seed in fall.
E. himalaicus. Upright perennial. H 6–7ft (2–2m), S 3ft (1m). Has strap-shaped, bright green basal leaves. In early summer, tall stems bear dense racemes of open cup-shaped, pure white blooms with long stamens. Z5–8
***E.* x *isabellinus* 'Cleopatra'** illus. p.220. Z5–8. **Shelford Hybrids** are perennials of varying habit and flower color. H 5ft (1.5m), S 2ft (60cm). Long racemes of orange, buff, pink or white flowers are borne freely in midsummer. Leaves are strap-shaped, in basal rosettes.
E. robustus illus. p.216.
E. spectabilis. Erect perennial. H 4ft (1.2m), S 2ft (60cm). Bears long racemes of pale yellow flowers, with brick-red anthers, in early summer. Leaves are strap-shaped, in basal rosettes. Z7–9

ERIA
ORCHIDACEAE

See also ORCHIDS.
E. coronaria, syn. *Trichosma suavis*. Evergreen, terrestrial or epiphytic orchid for a cool greenhouse. H 9in (23cm). Sprays of fragrant, creamy-white flowers, ½in (1cm) across, with red- and yellow-marked lips, are borne in fall. Broadly ovate, glossy leaves, are 4in (10cm) long. Needs semishade in summer and moist compost year-round. Z6–8 (min. 50°F/10°C, max. 86°F/30°C)

ERICA
Heath
ERICACEAE

See also HEATHERS.
Genus of *c.* 800 species of evergreen subshrubs, shrubs and small trees with usually small, needle-shaped or oblong leaves, grown for their funnel-, bell- or urn-shaped to round or tubular flowers. Most require acidic, well-drained soil, but species have a wide range of preferences from wet and peaty to hot, sandy soil. They tolerate fire; seeds germinate best after a fire.
E. andevalensis. Twiggy, erect shrub. H to 6ft (2m), S to 26in (65cm). Produces narrow, ovate, mid-green leaves in whorls of 4 or 5, and umbels of urn-shaped, pink, or white flowers from late summer to fall. Needs well-drained soil. Z6–10. **'Blanco de Odiel'** has white flowers.
E. arborea (Tree heath). Upright shrub or treelike heath. H 20ft (6m), S 5ft (1.5m). Liable to damage from frost and cold winds. Has needlelike, bright green leaves in whorls of 3 or 4 and bears scented, bell-shaped, white flowers from late winter to late spring. May tolerate slightly alkaline soil. Z9–10. **'Albert's Gold'**, H 6ft (2m), retains its golden foliage year-round.
'Alpina' (syn. *E.a.* var. *alpina*; illus. p.166) has vivid green foliage and compact racemes of white flowers. May be pruned hard to keep its shape and to encourage new growth. **var. *alpina*** see *E.a.* 'Alpina'.
E. australis (Spanish heath). Erect shrub. H to 7ft (2.2m), S 3ft (1m). Stems may be damaged by snow and wind. Has needlelike leaves in whorls of 4 and tubular to bell-shaped, white or purplish-pink flowers, mostly in clusters of 4, in spring. May tolerate slightly alkaline soil. Z9–10. **f. *albiflora* 'Mr. Robert'** has white flowers. **'Riverslea'** has bright purple-pink flowers.
E. baccans (Berry heath). Erect shrub. H to 6ft (2m), S 3ft (1m). Light green leaves are needle-shaped, in whorls of 4. Bears profuse, small, pink, almost globular flowers in whorls of 4 at shoot tips in spring; sepals are distinctly keeled. Requires well-drained, acidic soil. Z8–11
E. canaliculata (Channeled heath). Erect shrub. H to 10ft (3m), S 3ft (1m). Produces dark green, needle-shaped leaves in whorls of 3. Small, cup-shaped, pink or white flowers, with dark brown, almost black anthers, are borne in winter (under glass) or early spring (in the open). Requires acidic soil. Z9–10
E. carnea, syn. *E. herbacea* (Alpine heath, Winter heath). Spreading shrub. H to 1ft (30cm), S to 18in (45cm) or more. Produces needlelike, mid- to dark green leaves. Bell-shaped to tubular, pink, mauve, or white flowers, usually with prominent, colored sepals, open from early winter to late spring. Tolerates lime and some shade. Provides good groundcover. Z5–7.
'Adrienne Duncan' has dark green foliage tinged with bronze, and purple-pink flowers from midwinter to midspring. **'Ann Sparkes'** (illus. p.166), H 6in (15cm), has golden foliage, turning to bronze in winter, and produces rose-pink flowers. **'Cecilia M. Beale'**, H 6in (15cm), bears

an abundance of white flowers from midwinter to early spring. **'Challenger'** (illus. p.166) has magenta flowers, with deep pink sepals, set against dark green leaves. **'Eva'** is compact, with dark green foliage turning bronze in winter, and bears light red flowers in late winter. **'Foxhollow'**, a vigorous, spreading cultivar, has foliage that is golden-yellow in summer, with orange shoot tips in spring, and a few pale pink flowers. **'Golden Starlet'** (illus. p.166), H 6in (15cm), S 16in (40cm), has lime-green foliage that turns a glowing yellow in summer, and white flowers. **'Hilletje'** is compact, with golden green foliage turning orange in winter, and dark lilac-pink flowers deepening to heliotrope. **'Ice Princess'**, H 6in (15cm), S 14in (35cm), has erect, white flowers and bright green foliage. **'Isabell'**, H 6in (15cm), S 14in (35cm), has large, white flowers on bright green foliage, and an erect but spreading habit. **'Loughrigg'**, H 6in (15cm), produces dark purplish-red flowers from late winter to spring. **'Myretoun Ruby'**, H 8in (20cm), is vigorous but compact with brilliant deep purple-red flowers in late winter and early spring. **'Nathalie'**, H 6in (15cm), S 16in (40cm), has bright, dark purple flowers, neat, dark green foliage and a compact, upright habit. **'Pink Spangles'**, H 6in (15cm), is vigorous with flowers that have shell-pink sepals and deeper pink corollas. **'R.B. Cooke'**, H 8in (20cm), bears clear pink flowers from early winter to early spring. **'Rosalie',** H 6in (15cm), S 14in (35cm), has bright pink flowers, bronze-green foliage and a low, upright but spreading habit. **'Rotes Juwel'** is slow-growing, with dark green foliage, which turns red in winter, and beet-red flowers. **'Springwood White'** (illus. p.166), H 6in (15cm), the most vigorous white cultivar, is excellent as groundcover and bears large, white flowers, with brown anthers, from late winter to spring. **'Vivellii',** H 6in (15cm), has dark bronze-green foliage and deep purple-pink flowers from late winter to spring. **'Westwood Yellow'** is compact with golden-yellow foliage and deep pink flowers. '**Winter Snow'** produces bright green leaves and white flowers. **'Wintersonne'**, H 6in (15cm), S 14in (35cm), has magenta flowers and red-brown foliage.

E. cerinthoides (Fire heath, Rooihaartjie). Variable shrub with woody rootstock and erect shoots. H 3–6ft (1–2m), S to 3ft (1m). Leaves, in whorls of 4 to 6, are hairy, needle-shaped, spreading or erect, to ⅝in (15mm) long. Downy, usually red, tubular flowers, are borne in terminal umbels of 10–40. Requires acidic, well-drained soil; prune after flowering. Z8–11

E. ciliaris (Dorset heath). Loose shrub. H to 1ft (30cm), S 16in (40cm). May be damaged in severe weather. Has oblong, dark green leaves in whorls of 3. Bears long racemes of lop-sided, bottle-shaped, bright pink flowers in tiers of 3 or 4 in summer. Requires acidic soil and prefers warm, moist conditions. Z8–9. **'Corfe Castle'** (illus. p.166) produces salmon-pink flowers from summer to early fall. **'David McClintock'** (illus. p.166) has light gray-green foliage and bears white flowers, with deep pink tips, from summer to early fall. **'Mrs. C.H. Gill'** has dark gray-green foliage and clear red flowers. **'Ram'** is compact, with yellowish green foliage and magenta flowers. **'White Wings'**, a sport of 'Mrs. C.H. Gill', has dark gray-green foliage and white flowers.

E. cinerea (Bell heather). Bushy, compact shrub. H 1ft (30cm), S 18–24in (45–60cm). Has needlelike, mid- to deep green leaves and bears urn- to bell-shaped flowers in shades of pink and dark red, occasionally white, from early summer to early fall. Prefers a warm, well-drained position and requires acidic soil. Z6–8. '**Atropurpurea'** has deep purple flowers in long racemes. **'C.D. Eason'** (illus. p.166) has distinctive, dark green foliage and bright red flowers. **'Cevennes'** is upright in habit and bears a profusion of mauve flowers. **'C.G. Best'** has mid-green foliage and rose-pink flowers. **'Domino'** produces white flowers that contrast with dark brown stems and sepals and almost black stigmas. **'Eden Valley'** (illus. p.166), H 8in (20cm), bears white flowers with lavender-mauve tips. **'Fiddler's Gold'**, H 10in (25cm), has golden-yellow foliage, deepening to red in winter, and lilac-pink flowers. **'Golden Hue'**, H 14in (35cm), has amethyst flowers set on pale yellow foliage, tipped orange in winter. **'Lime Soda'**, H 14in (35cm), bears soft lavender flowers in profusion on lime-green foliage. **'Pentreath'** has rich purple flowers. **'Pink Ice'**, H 8in (20cm), is compact with soft pink flowers. **'P.S. Patrick'** is a vigorous cultivar with purple flowers and dark green foliage. **'Purple Beauty'** has purple flowers and dark foliage. **'Stephen Davis'**, H 10in (25cm), has brilliant, almost fluorescent, red flowers. **'Ted Oliver'**, H 16in (40cm). produces bicolored flowers, white at the mouth and purple at the base. **'Velvet Night'**, H 10in (25cm), has very dark purple, almost black flowers. **'Windlebrooke'**, H 10in (25cm), is vigorous, with golden foliage, turning bright orange-red in winter, and mauve flowers.

E.* x *darleyensis (Darley Dale heath). Bushy shrub. H 1½ft (45cm), S 3ft (1m) or more. Has needlelike, mid-green foliage, with cream, pink or red, young growth in late spring. Tubular, white, pink or purple flowers are borne in spikes from early winter to late spring. Tolerates lime. Z7–8. **'Arthur Johnson'** (illus. p.166), H 3ft (1m), has young foliage with cream and pink tips in spring and long racemes of mauve-pink flowers from midwinter to spring. **'Eva Gold'** has golden-bronze leaves throughout the year, and magenta flowers. **'Furzey'** (illus. p.166) has a compact, vigorous habit, dark green leaves and bears deep pink flowers. **'Ghost Hills'** has cream-tipped shoots in spring and a profusion of pink flowers from midwinter to spring. **'Jack H. Brummage'**, H 1ft (30cm), has golden foliage, with yellow and orange tints, and mauve flowers. **'Jenny Porter'** has foliage with pale cream young shoots in spring, and lilac flowers. **'J.W. Porter'**, H 1ft (30cm), has reddish, young shoots in spring and mauve-pink flowers from midwinter to late spring. **'Kramers Rote'** has dark bronze-green foliage all year, and bears deep purple-red flowers from late fall to late spring. **'Lucie'**, H 16in (40cm), produces large magenta flowers in showy, broad racemes. '**Moonshine'** is bushy with bright yellow foliage year-round, and shell-pink flowers that darken to pink. **'Spring Surprise'**, H 18in (45cm), is broad, upright, with dark green foliage and dark rose-pink flowers. **'White Perfection'** (illus. p.166) has bright green foliage and produces white flowers.

E. discolor complex including *E. speciosa* (Two-color heath). Very variable, erect, multi- or single-stemmed shrub, growth often continuing beyond flowers. H 2–5ft (0.6m–1.5m). Very small leaves in whorls of 3 or 4 are linear, erect or spreading. Tubular, long, dark pink to red or orange-red flowers, usually with pale green, white, or yellow lobes, open in spring; anthers have awns. Requires acidic, well-drained soil. Z8–11

E. erigena, syn. *E. hibernica, E. mediterranea* (Irish heath, Mediterranean heath). Upright shrub. H to 8ft (2.5m), S to 3ft (1m). Top growth may be damaged in severe weather, but plant recovers well from the base. Has needlelike, mid-green leaves and, usually, bell-shaped, mauve-pink flowers from early winter to late spring. Tolerates lime. Flowers of some cultivars have a pronounced scent of honey. Z8–9. **'Brian Proudley'** (illus. p.166), H 3ft (90cm), S 16in (40cm), is a vigorous, erect cultivar with bright green leaves and long sprays of white flowers borne from late fall to midspring. **'Golden Jubilee',** H to 3ft (1m), has golden foliage year-round, and white flowers. **'Irish Dusk'**, H 18in (45cm), has dark green foliage and salmon-pink flowers from midwinter to early spring. **'Thing Nee'**, H and S to 3ft (1m), is bushy, with pale golden foliage throughout the year, and pink flowers. **'W.T. Rackliff'**, H 2ft (60cm), has dark green foliage and produces thick clusters of white flowers from late winter to late spring.

E. gracilis. Compact shrub. H and S to 1ft (30cm). Has needlelike, mid-green leaves and clusters of small, bell-shaped, pink, red, or magenta flowers from early fall to early spring. There are many named cultivars, some with golden foliage. Usually grown as a potted plant; may be planted outdoors in summer in a sheltered site. Z10–11

E. herbacea. See *E. carnea.*

E. hibernica. See *E. erigena.*

E. lusitanica (Portuguese heath). Bushy heath, H to 10ft (3m), S 3ft (1m). Has bright green leaves and, from late fall to late spring, bears elongated, bell-shaped flowers that may be pink in bud but pure white when fully open. Z8–10. **'Sheffield Park'** (illus. p.166) is upright, with deep pink buds and white flowers.

E. mackayana (Mackay's heath). Spreading shrub. H to 10in (25cm), S 16in (40cm). Has oblong, mid-green leaves and bears umbels of urn-shaped, pink, mauve-pink or white flowers from midsummer to early fall. Likes damp, acidic soil. Z5–7. **'Galicia'**, H 14in (35cm), is vigorous and bushy, producing dark magenta flowers. **'Shining Light'**, H 20in (50cm), S 22in (55cm), is vigorous, has gray-green foliage, and bears abundant, small, pure white flowers.

E. mammosa (Nine-pin heath, Rooiklossieheide). Slow-growing, erect shrub. H 20–36in (50–100cm). Leaves are needle-shaped, to ½in (10mm), in whorls of 4 to 6. Orange-red, purple, dark red, pink, greenish cream or white, hairless flowers, ⅝–¾in (15–20mm) long, are tubular, inflated around the middle and constricted at the mouth. Flowers open in dense, spikelike flower heads toward the shoot tips, mainly in summer and fall. Needs acidic, well-drained soil and a sunny position. Z8–11

E. manipuliflora (Whorled heath). Erect, spreading or prostrate shrub. H to 6ft (2m), S to 3ft (1m). Leaves are needlelike and mid-green. Urn- to bell-shaped, mauve or pink flowers with prominent, dark anthers, often noticeably scented, open from midsummer to late fall. Tolerates lime. Z6–10. **'Aldeburgh'**, H 3ft (1m), S to 3ft (1m), is erect, with lilac-pink flowers; forms a neat hedge. **'Bert Jones'**, H 3ft (1m), has very long, slender spikes of palest pink flowers.

E. mediterranea. See *E. erigena.*

E. pageana. Bushy shrub. H to 2ft (60cm), S 1ft (30cm). Has needlelike, mid-green leaves and, from late spring to early summer, tubular to bell-shaped, rich yellow flowers. Z10

E. perspicua (Prince of Wales heath). Variable, evergreen shrub. H to 6ft (2m), S 3ft (1m). Has needlelike, overlapping, gray-green leaves and, mainly from early fall to winter, tubular flowers in white, pink-and-white, red-and-white, purple-and-white or red. Needs damp (but not wet) soil. Z10–11

E.* x *praegeri. See *E.* x *stuartii.*

E. scoparia (Besom heath). Bushy shrub. H to 10ft (3m), S 3ft (1m). Has needlelike, dark green leaves. Abundant, tiny, urn-shaped, greenish-brown flowers are borne in late spring and early summer. Wind-pollinated, so releases clouds of pollen. Requires acidic soil. Z8–9. **'Minima'**, H 1ft (30cm), has bright green foliage.

E. speciosa. See *E. discolor.*

E. spiculifolia, syn. *Bruckenthalia spiculifolia* (Spike heath). Bushy, low shrub. H and S 6in (15cm). Needlelike, glossy, dark green leaves clothe stiff stems. Erect racemes of tiny, pink flowers are borne in summer at shoot tips. Z5–7. **'Balkan Rose'**, H 6in (15cm), S 1ft (30cm), has gray-green foliage and purple-pink flowers. **'Raika'** has white flowers.

E. stricta. See *E. terminalis.*

E.* x *stuartii, syn. *E.* x *praegeri.* Compact shrub. H 6in (15cm), S 1ft (30cm). Has oblong, dark green leaves. Numerous umbels of urn-shaped, pink flowers are produced in late spring and summer. Prefers moist, acidic soil. Z5–7. **'Irish Lemon'** produces new shoots with lemon-yellow tips in spring, and bright pink flowers. **'Stuartii'**, see *E.* x *s.* 'Stuart's Original'. **'Stuart's Original'** (syn. *E.* x *s.* 'Stuartii') has grayish-green foliage and peculiarly shaped tubular flowers, beet-purple tipped, that fade to shell-pink at the bases.

E. terminalis, syn. *E. stricta* (Corsican heath). Shrub with stiff, upright growth. H and S to 8ft (2.5m). Has needlelike, mid-green foliage. Urn-shaped, mauve-pink flowers, borne from early summer to early fall, turn russet as they fade in winter. Tolerates limestone. Z5–7. **'Thelma Woolner'**, H to 30in (75cm), S to 2ft

(60cm) has dark green foliage and deep lilac-pink flowers.
E. tetralix (Cross-leaved heath). Spreading shrub. H to 1ft (30cm), S 18in (45cm). Has oblong, gray-green leaves in whorls of 4. Umbels of urn-shaped, pink flowers are borne from summer to early fall. Requires acidic, preferably moist soil. Z5–7. **'Alba Mollis'** has silver-gray leaves and bears white flowers from early summer to late fall. **'Con Underwood'** has gray-green foliage and dark red flowers. **'Hookstone Pink'** has silver-gray foliage and bears rose-pink flowers from late spring to early fall. **'Riko'**, H 8in (20cm), S 14in (35cm), is compact, with gray-green foliage and ruby flowers. **f. *stellata* 'Pink Star'** produces pink flowers held upright in a starlike pattern.
E. umbellata (Dwarf Spanish heath). Bushy shrub. H and S 2ft (60cm). Has needlelike, mid-green leave and bell-shaped, mauve flowers, with chocolate-brown anthers, in late spring. Z6–10
E. vagans (Cornish heath). Vigorous, spreading, bushy shrub. H and S 30in (75cm). Leaves are needlelike and mid-green. Urn- to bell-shaped, pink, mauve or white flowers are borne from midsummer to late fall. Tolerates lime. Responds well to hard pruning. Z5–7. **'Birch Glow'** (illus. p.166), H 18in (45cm), has bright green foliage and glowing rose-pink flowers. **'Fiddlestone'**, H 1ft (30cm), S 2ft (60cm), bears deep cerise flowers. **'Golden Triumph'**, H 16in (40cm), S 26in (65cm), shoot tips are bright golden in spring, turning green in summer, and flowers are white. **'Kevernensis Alba'**, H 10in (25cm), S 18in (45cm), has bright green foliage and compact spikes of white flowers. **'Lyonesse'**, H 18in (24cm), has dark green foliage and long, tapering spikes of white flowers with brown anthers. **'Mrs. D.F. Maxwell'** (illus. p.166), H 18in (45cm), has dark green foliage and glowing deep pink flowers. **'St. Keverne'** (illus. p.166), H 18in (45cm), is a neat, bushy shrub with rose-pink flowers; may be used for a low hedge. **'Yellow John'**, H 14in (35cm), S 18in (45cm), is vigorous, with bright yellow foliage and lilac flowers.
E.* x *veitchii (Veitch's heath). Treelike heath. H to 6ft (2m), S 3ft (1m). Has needlelike, mid-green leaves. Scented, tubular to bell-shaped, white flowers are produced in dense clusters from midwinter to spring. Z8–9. **'Exeter'** has a profusion of white flowers, almost obscuring the foliage. **'Gold Tips'** is similar to 'Exeter', but young shoots have golden tips in spring. **'Pink Joy'** has pink flower buds that open to clear white.
***E. versicolor*.** Erect shrub, similar to *E. discolor*. H to 10ft (3m). Leaves occur in whorls of 3 or 4. Tubular flowers are to 1¼in (3cm) long, red with green or white tips, have awn-less anthers and open mainly from fall to early winter. Z8–11
***E. verticillata*.** Erect shrub. H to 2ft (60cm), S 1ft (30cm). Unusually, flowers are tightly packed in whorls at intervals along an otherwise almost bare stem. The tubular, pale mauve-pink flowers, ½in (1.5cm) long, are produced intermittently throughout the year. Was extinct in the wild until re-introduced from a few plants in cultivation. Z10–11
E.* x *watsonii (Watson's heath). Compact shrub, often with discolored new shoots in spring. H 1ft (30cm), S 15in (38cm). Oblong, mid-green leaves often have bright-colored tips in spring. Bears urn-shaped, pink flowers from mid- to late summer. Z5–7. **'Claire Elise'**, H 10in (25cm), S 18in (45cm), is compact, with shoots that are tipped gold when young, dark green when mature, and deep amethyst-purple flowers. **'Dawn'** produces young shoots with orange-yellow tips and bears deep mauve-pink flowers in compact clusters all summer. **'Pink Pacific'**, H 10in (25cm), S 14in (35cm), is spreading, with bright orange-red shoots in spring, turning gray-green, and clear rose-pink flowers from salmon-pink buds.
E.* x *williamsii (Williams's heath). Spreading shrub. H 1ft (30cm), S 2ft (60cm). Young shoots may be discolored in spring. Has oblong, dark green leaves and bears bell-shaped, mauve or pink flowers in midsummer. Prefers acidic soil. Z5–7. **'Ken Wilson'**, H 1ft (30cm), S 20in (50cm), has uniformly grayish-green foliage and profuse, magenta flowers. **'P.D. Williams'**, H 18in (45cm), bears dark mauve-pink flowers; sometimes keeps its golden foliage tips all summer.

ERIGERON
Fleabane
ASTERACEAE/COMPOSITAE

Genus of mainly spring- and summer-flowering annuals, biennials and perennials, grown for their daisylike flowers. Ideal for rock gardens or borders. Prefers sun and well-drained soil, but do not allow to dry out in growing season. Resents winter damp. Propagate by division in spring or early fall or by seed in fall, selected forms by softwood cuttings in early summer.
E. alpinus (Alpine fleabane) illus. p.340.
***E. aurantiacus*.** Clump-forming perennial. H 6in (15cm), S 1ft (30cm). Has long, ovate, gray-green leaves and produces daisylike, brilliant orange flower heads in summer. Propagate by seed or division in spring. Z5–8
***E. aureus*.** Short-lived, clump-forming perennial. H 2–4in (5–10cm), S 6in (15cm). Bears small, spoon-shaped to ovate, hairy leaves. Slender stems each bear a relatively large, daisylike, golden-yellow flower head in summer. Dislikes winter wet with no snow cover. Excellent for a scree, trough or alpine house; prone to aphid attack. Z5–8. **'Canary Bird'**, H to 4in (10cm), is longer lived, and bears bright canary-yellow flower heads.
***E.* 'Charity'** illus. p.264.
***E.* 'Darkest of All'.** See *E.* 'Dunkelste Aller'.
***E.* 'Dunkelste Aller'**, syn. *E.* 'Darkest of All', illus. p.240.
***E.* 'Foersters Liebling'.** Clump-forming perennial. H 32in (80cm), S 2ft (60cm). In summer, daisylike, semidouble, pink flower heads, with yellow centers, are borne above narrowly ovate, grayish-green leaves. Z5–8
***E. glaucus* 'Elstead Pink'.** Tufted perennial. H 1ft (30cm), S 18in (45cm). Daisylike, dark lilac-pink flower heads are borne throughout summer above ovate, gray-green leaves. Z5–7
E. karvinskianus, syn. *E. mucronatus*, illus. p.363.
***E. mucronatus*.** See *E. karvinskianus*.
***E.* 'Quakeress'.** Clump-forming perennial. H 32in (80cm), S 2ft (60cm). Produces abundant, daisylike, delicate pink-flushed, white flower heads, with yellow centers, in summer. Narrowly ovate leaves are grayish-green. Z5–7
***E.* 'Serenity'.** Clump-forming perennial. H and S to 2ft (60cm). Daisylike, violet-mauve flower heads, with yellow centers, are borne in early to midsummer. Z5–7

ERINACEA
PAPILIONACEAE/LEGUMINOSAE

Genus of one species of slow-growing, evergreen subshrub with hard, sharp, blue-green spines and pealike flowers. In spring, it produces short-lived, soft leaves. Needs a sheltered position with full sun and deep, gritty, well-drained soil. Propagate by seed when available or by softwood cuttings in late spring or summer.
E. anthyllis, syn. *E. pungens* (Hedgehog broom), illus. p.334.
***E. pungens*.** See *E. anthyllis*.

ERINUS
Fairy foxglove
PLANTAGINACEAE/SCROPHULARIACEAE

Genus of short-lived, semievergreen perennials, suitable for rock gardens, walls and troughs. Needs sun and well-drained soil. Propagate species by seed in fall (but seedlings will vary considerably), selected forms by softwood cuttings in early summer. Self-seeds freely.
E. alpinus illus. p.352. **'Doktor Hähnle'** is a semievergreen, basal-rosetted perennial. H and S 2–3in (5–8cm). Small, flat, 2-lipped, deep pink flowers open in late spring and summer. Leaves are small, ovate and mid-green. Z4–9

ERIOBOTRYA
ROSACEAE

Genus of evergreen, fall-flowering trees and shrubs, grown for their foliage, flowers and edible fruits. Where marginally hardy, grow against a sunny wall. Fruits, which ripen in spring, may be damaged by hard frost. Requires sunny, fertile, well-drained soil. Propagate by seed in fall or spring.
E. japonica (Loquat) illus. p.194.

***Eriocactus*.** See *Parodia*.

ERIOGONUM
St Catherine's lace, Wild buckwheat
POLYGONACEAE

Genus of annuals, biennials and evergreen perennials, subshrubs and shrubs, grown for their rosetted, hairy, often silver or white leaves. Needs full sun and well-drained, even poor soil. In cool, wet-winter areas, protect shrubby species and hairy-leaved perennials. Water potted plants moderately in summer, less in spring and fall, very little in winter. Remove flower heads after flowering unless seed is required. Propagate by seed in spring or fall or by semiripe cuttings in summer. Divide perennial root clumps in spring.
E. arborescens illus. p.453.
E. crocatum (Saffron buckwheat). Evergreen, subshrubby perennial. H to 8in (20cm), S 6in (15cm). Ovate, hairy leaves have woolly, white undersides. Heads of minute, sulfur-yellow flowers open in summer. A good alpine houseplant. Z9–10
E. giganteum (St Catherine's lace). Evergreen, rounded shrub. H and S 3–6ft (1–2m). Has oblong to ovate, gray leaves, white-downy beneath. Bears small, white flowers in branching clusters to 1ft (30cm) long in summer. Z11–15 (min. 41°F/5°C)
***E. ovalifolium*.** Evergreen, domed perennial. H 1ft (30cm), S 4in (10cm). In summer, produces umbels of tiny, bright yellow flowers above branched stems. Has tiny, spoon-shaped, hairy, gray leaves. Excellent for an alpine house. Z4–8
E. umbellatum (Sulfur flower) illus. p.344.

ERIOPHYLLUM
Golden yarrow, Woolly sunflower
ASTERACEAE/COMPOSITAE

Genus of annuals, perennials and evergreen subshrubs, with silvery foliage and daisylike flowers, mainly in summer. Suitable for rock gardens. Needs sun and well-drained soil. Propagate by division in spring or by seed in fall.

E. lanatum, syn. *Bahia lanata*, illus. p.276.

ERIOSYCE
SYN. NEOPORTERIA
CACTACEAE

Genus of simple to clustering, spherical to columnar, perennial cacti. Produces egg-shaped, red, brown or green seed pods which are similar to those of *Wigginsia*. Frost tender. Requires full sun and very well-drained soil. Propagate by seed in spring or summer.
E. chilensis, syn. *Echinocactus chilensis, Neochilenia chilensis, Neoporteria chilensis*. Spherical, then columnar-stemmed, perennial cactus. H 1ft (30cm), S 4in (10cm). Pale green stem has a dense covering of sturdy, golden spines. Crown bears flattish, pink-orange or white flowers, to 2in (5cm) across, in summer. Z9–11 (min. 41°F/5°C)
E. kunzei, syn. *Neoporteria nidus*. Spherical to columnar, perennial cactus. H 4in (10cm), S 3in (8cm). Long, soft, gray spines completely encircle a dark greenish-brown stem. During spring or fall, the crown produces tubular, pink to cerise flowers with paler bases, 1¼–2in (3–5cm) long, that open only at the tips. Z9–11
E. napina, syn. *Neochilenia mitis* of gardens, *Neoporteria mitis, Neoporteria napina*, illus. p.485.
E. subgibbosa, syn. *Neoporteria subgibbosa*. Spherical to columnar-stemmed, perennial cactus. H 1ft (30cm), S 4in (10cm). Mid-green to dark gray-green stem bears large, woolly areoles and sturdy, amber spines. In late summer, the crown bears flattish, carmine-pink flowers, 1½in (4cm) across. Z9–11 (min. 41°F/5°C)
E. villosa, syn. *Neoporteria villosa*, illus. p.490.

ERITRICHIUM
Alpine forget-me-not

BORAGINACEAE

Genus of short-lived perennials with soft, gray-green leaves and forget-me-not-like flowers. Suitable for rock gardens and alpine houses. Needs sun and well-drained, peaty, sandy soil with a deep collar of grit; dislikes damp conditions. Extremely difficult to grow. Propagate by seed when available or by softwood cuttings in summer.
E. elongatum. Tuft-forming perennial. H ¾in (2cm), S 1¼in (3cm). Leaves are ovate, hairy and gray-green. Short flower stems each bear small, rounded, flat, blue flowers in early summer. Z5–7
E. nanum illus. p.370.

ERODIUM
Heron's bill, Stork's bill

GERANIACEAE

Genus of annuals, perennials, and evergreen and deciduous subshrubs, grown for their flowers, which are borne over a long period, and their attractive, foliage. Ideal for a rock garden or alpine house. Needs sun and well-drained soil. Divide in spring, take basal stem cuttings in summer or sow seed as soon as it is ripe.
E. chamaedryoides. See *E. reichardii.*
E. cheilanthifolium, syn. *E. petraeum* subsp. *crispum*, illus. p.341.
E. chrysanthum illus. p.343.
E. corsicum illus. p.362.
E. foetidum, syn. *E. petraeum.* Compact, mound-forming perennial. H 6–8in (15–20cm), S 8in (20cm). Produces saucer-shaped, single, red-veined, pink flowers in summer. Ovate, gray leaves have deeply cut margins. Z6–8
E. manescaui. See *E. manescavii*
E. manescavii, syn. *E. manescaui*, illus. p.265.
E. petraeum. See *E. foetidum.* **subsp. *crispum*** see *E. cheilanthifolium.*
E. reichardii, syn. *E. chamaedryoides.* Mound-forming perennial. H 1in (25cm), S 2½–3in (6–8cm). In summer, saucer-shaped, single flowers, white with darker veins, are borne above tiny, oaklike leaves. Good for a rock garden or trough. Z8–9
***E.* x *variabile* 'Flore Pleno'.** Variable, cushion-forming or spreading perennial. H 4in (10cm), S 1ft (30cm). Has narrowly ovate, dark to gray-green leaves with scalloped edges and long stalks. From spring to fall, flower stems each bear 1 or 2 rounded, double, deep pink flowers with darker veins; outer petals are rounded, inner petals narrower. Z6–10. **'Ken Aslet'** has single, deep pink flowers.

Erpetion reniforme. See *Viola hederacea.*

ERYNGIUM
Eryngo, Sea holly

APIACEAE/UMBELLIFERAE

Genus of annuals, biennals, and perennials, some evergreen, grown for their flowers and foliage. Needs sun and well-drained soil; some require fertile, moist soil, others less fertile, dry soil. Propagate species by seed in fall, selected forms by division in spring or root cuttings of perennials in late winter.
E. agavifolium, syn. *E. bromeliifolium* of gardens. Evergreen, clump-forming perennial. H 5ft (1.5m), S 2ft (60cm). Forms rosettes of sword-shaped, sharply toothed, rich green leaves. Thistlelike, greenish-white flower heads are produced on branched stems in summer. Z6–9
E. alpinum illus. p.240.
E. amethystinum. Rosette-forming perennial. H and S 2ft (60cm). Has ovate, pinnate, spiny, mid-green leaves. In summer, produces branched stems of small, thistlelike, blue flowers surrounded by spiky, silvery-green bracts. Z3–8
E. bourgatii illus. p.270. **'Oxford Blue'**, H 18in (45cm), S 1ft (30cm), is a clump-forming perennial with basal, deeply cut, gray-green leaves with silver veins. Thistlelike, dark, silver-blue flower heads, surrounded by silvery-blue, spiny bracts, are borne on branched, wiry stems, from mid- to late summer. **'Pico's Blue'**, H 2ft (60cm), S 20in (50cm), is larger, with intensely blue flowers, surrounded by 10 to 15 intensely blue, lance-shaped bracts. Z5–9
E. bromeliifolium of gardens. See *E. agavifolium.*
E. eburneum, syn. *E. paniculatum* of gardens. Evergreen perennial. H 5–6ft (1.5–2m), S 2ft (60cm). Has spiny, linear, mid-green leaves. Produces heads of thistlelike, green flowers with white stamens on branched, arching stems in late summer. Z9–11
E. giganteum (Miss Willmott's ghost). Rosette-forming short-lived perennial that dies after flowering. H 3–4ft (1–1.2m), S 2½ft (75cm). Heart-shaped, basal leaves are mid-green. Has large, rounded heads of thistlelike, blue flowers, surrounded by spiny, silvery bracts, in late summer. Z4–9.
'Silver Ghost', H to 2ft (60cm) has narrower, very silvery-white bracts.
E.* x *oliverianum illus. p.241.
E. pandanifolium. Clump-forming, evergreen perennial. H 8ft (2.5m), S 5ft (1.5m). Has narrowly sword-shaped, arching, slightly toothed, silvery-green basal leaves. Bears towering umbels of small, thistlelike, purplish-brown flower heads from late summer. Z9–10
E. paniculatum. See *E. eburneum.*
E.* x *tripartitum illus. p.250.
E. variifolium illus. p.271.
E.* x *zabelii. Clump-forming, semievergreen perennial. H to 30in (75cm), S 18in (45cm). Produces heart-shaped, spiny-toothed, dark green, basal leaves and heads of thistlelike, deep violet flowers, within spiny, green-tipped, blue bracts. Z5–8. **Big Blue'** bears steel-blue flowers, to 4in (10cm) across. **'Violetta'** has rounded, mid-green, divided leaves and loose heads of deep violet flowers, with narrow, silvery-blue bracts, in late summer.

ERYSIMUM
syn. CHEIRANTHUS
Wallflower

BRASSICACEAE/CRUCIFERAE

Genus of annuals, biennials, and mainly evergreen, often woody-based perennials, now including *Cheiranthus*, grown for their flowers. Many are ideal for borders, banks, raised beds and rock gardens. Requires sun and well-drained soil. Propagate by seed in spring or fall, or by softwood cuttings in summer.
***E.* 'Bowles's Mauve'**, syn. *Cheiranthus* 'Bowles' Mauve', *E.* 'E.A. Bowles', illus. p.261.
***E.* 'Bredon'**, syn. *Cheiranthus* 'Bredon', illus. p.336.
E. cheiri, syn. *Cheiranthus cheiri* (Wallflower). Evergreen, bushy perennial, grown as a biennial. H 10–32in (25–80cm), S 12–16in (30–40cm). Produces lance-shaped, mid- to deep green leaves. Short racemes of fragrant, 4-petaled flowers in bright yellow-orange are borne in spring. Z3–7. **'Blood Red'** illus. p.308. **'Fire King'** illus. p.326. **'Harpur Crewe'** (syn. *E.c.* x *kewense* 'Harpur Crewe') illus. p.336. Flowers of **'Ivory White'** are creamy white. **x *kewense* 'Harpur Crewe'** see *E.c.* 'Harpur Crewe'. **'Orange Bedder'** see *E.* x *marshallii* 'Orange Bedder'. **'Persian Carpet'** produces fragrant flowers in shades of cream, golden yellow, bright orange, apricot, purple, and rose-red that are excellent for cutting. **Treasure Series** has red flowers.
***E.* 'E.A. Bowles'.** See *E.* 'Bowles' Mauve'.
E. helveticum, syn. *E. pumilum*, illus. p.358.
E. linifolium. Short-lived, evergreen, mat-forming, woody-based, perennial. H to 1ft (30cm), S 8in (20cm) or more. Leaves are narrowly lance-shaped, wavy, and gray-green. Long racemes of small, 4-petaled, lilac or lavender-blue flowers are produced from midspring to early fall. Z7–9
E.* x *marshallii, syn. *Cheiranthus* x *allionii*, E. x *allionii* of gardens (Siberian wallflower). Tufted, short-lived, evergreen perennial, grown as a biennial, with lance-shaped, coarsely toothed leaves. In spring, bears spice-scented, brilliant orange flowers. H 20–24in (50–60cm), S to 1ft (30cm). Z3–7. **'Orange Bedder'** (syn. *E. cheiri* 'Orange Bedder') illus. p.324.
***E.* 'Moonlight'**, syn. *Cheiranthus* 'Moonlight', illus. p.335.
E. pumilum. See *E. helveticum.*

ERYTHRINA
Coral tree

PAPILIONACEAE/LEGUMINOSAE

Genus of deciduous semievergreen, or evergreen trees, shrubs and perennials, grown for their pealike flowers. Requires full sun and well-drained soil. Water containerized plants moderately, very little in winter or when leafless. Propagate by seed in spring or semiripe cuttings in summer. Red spider mite may be a problem.
E. americana. See *E. coralloides.*
E.* x *bidwillii illus. p.136.
E. coralloides, syn. *E. americana* (Flame coral tree, Naked coral tree). Deciduous, untidily rounded shrub or tree with somewhat prickly stems. H and S 10–20ft (3–6m). Produces leaves with 3 triangular leaflets, the largest central one 4½in (11cm) long. Racemes of pealike, red flowers are borne on leafless stems in early spring and summer. Z9–11
E. crista-galli (Cockspur coral tree) illus. p.137.

ERYTHRONIUM
Dog's-tooth violet, Trout lily

LILIACEAE

Genus of spring-flowering, clump-forming perennials, with long-pointed, toothlike bulbs, grown for their pendent flowers and, in some cases, mottled leaves. Requires partial shade and humus-rich, well-drained soil, where tubers will not dry out in summer while dormant. Some species increase by offsets, which can be divided in late summer. Do not allow bulbs to dry out before replanting, 6in (15cm) deep. Propagate by seed in fall.
E. americanum illus. p.421.
E. californicum illus. p.415. **'White Beauty'** illus. p.399.
E. dens-canis (European dog's-tooth violet) illus. p.418.
E. grandiflorum. Spring-flowering, bulbous perennial. H 4–12in (10–30cm), S 2–3in (5–8cm). Produces 2 lance-shaped, semierect, basal, plain bright green leaves. In spring, each stem bears 1–3 pendent, bright yellow flowers with reflexed petals. Z4–9
E. hendersonii illus. p.402.
E. oregonum illus. p.399.
***E.* 'Pagoda'** illus. p.406.
E. revolutum (American trout lily). Bulbous perennial. H 8–12in (20–30cm), S 6in (15cm). Has lance-shaped, semierect, basal, brown-mottled, green leaves and a loose spike of 1–4 pendent, pale to deep pink flowers with reflexed petals in spring. Z5–8
E. tuolumnense. Vigorous, bulbous perennial. H to 1ft (30cm), S 5–6in (12–15cm). Has 2 lance-shaped, semierect, basal, glossy, plain green leaves. Bears a spike of up to 10 pendent, bright yellow flowers with reflexed petals in spring. Z3–9

ESCALLONIA

ESCALLONIACEAE

Genus of deciduous, semievergreen, but mostly evergreen shrubs and, more rarely, small trees, grown for their 5-petaled flowers and glossy foliage. Thrives in mild areas, where *Escallonia* is wind-resistant and ideal for hedging in coastal gardens. Where marginally hardy, protect from strong winds and grow against a sunny wall. Requires full sun and fertile, well-drained soil. Trim hedges and wall-trained plants after flowering. Propagate by softwood cuttings in summer.
***E.* 'Apple Blossom'** illus. p.133.
***E.* 'Donard Seedling'** illus. p.131.
***E.* 'Iveyi'** illus. p.112.
***E.* 'Langleyensis'.** Evergreen or semievergreen, arching shrub. H 6ft (2m), S 10ft (3m). Has small, glossy, bright green leaves and an abundance of rose-red flowers from early to midsummer. Z8–9
E. leucantha illus. p.112.
***E. rubra* 'Crimson Spire'.** Very vigorous, evergreen, upright shrub. H and S 10ft (3m). Has ovate, rich green leaves and, throughout summer, tubular, deep red flowers. Z8–10. **'Woodside'** illus. p.156.
E. virgata illus. p.130.

ESCHSCHOLZIA
California poppy

PAPAVERACEAE

Genus of annuals and perennials, grown for their bright, poppylike flowers. Good for rock gardens and gaps in paving. Requires sun and poor, very well-drained soil. Deadhead regularly to ensure a long flowering period. Propagate by seed sown outdoors in spring or early fall.
E. caespitosa illus. p.321.
E. californica (California poppy) illus. p.326. **Ballerina Series** has flowers in shades of red, orange, yellow or cream. **'Orange King'** has single, tangerine flowers. **Thai Silk Series** illus. p.327. **Thai Silk Series 'Apricot Chiffon'** bears semidouble, creamy-yellow flowers edged with intense coral-orange. Z11

ESCOBARIA

CACTACEAE

Genus of mainly spherical to columnar, single or clump-forming, perennial cacti. The stems are studded with tubercles (each with a furrow immediately above it) and very spiny, generally white areoles. Frost tender, but some selections may be frost hardy if kept dry. Needs full sun and poor to moderately fertile, well-drained soil. Propagate by seed in spring or by offsets in summer.
E. vivipara, syn. *Coryphantha vivipara*, illus. p.480.

ESPOSTOA

CACTACEAE

Genus of columnar, perennial, slow-growing cacti, each with a 10–30-ribbed stem, eventually becoming bushy or treelike with age. Most species are densely covered in woolly, white hairs masking short, sharp spines. Bears cup-shaped to tubular flowers, as well as extra wool down the side of stems facing the sun, only after about 30 years. Frost tender. Needs full sun and very well-drained soil. Propagate by seed in spring.
E. lanata (Cotton ball, Peruvian old-man cactus) illus. p.482.

EUCALYPTUS
Gum, Ironbark

MYRTACEAE

Genus of evergreen trees and shrubs, grown for their bark, flowers and often aromatic foliage. Needs full sun, shelter from cold winds, and fertile, well-drained soil. Plant smallest obtainable trees. Water potted plants moderately, less in winter. Attractive, young foliage of some species may be retained by cutting growth back in spring. Propagate by seed in spring or summer.
E. camaldulensis (Red river gum). Fast-growing, drought-resistant, evergreen, rounded tree. H 100ft (30m) or more, S 70ft (20m) or more. Young bark is gray, brown and cream; leaves are lance-shaped, slender, green or blue-green. Bears umbels of small, cream flowers in summer. Z9–10
E. coccifera (Mount Wellington peppermint, Tasmanian snow gum) illus. p.68.
E. dalrympleana (Mountain gum) illus. p.67.
E. glaucescens (Tingiringi gum). Evergreen, spreading tree or shrub. H 40ft (12m), S 25ft (8m). Young bark is white. Leaves are silvery-blue and rounded when young; long, narrow and blue-gray when mature. In fall, bears clusters of many-stamened, white flowers. Z9–10
E. globulus (Tasmanian blue gum). Very fast-growing, evergreen, spreading tree. H 100ft (30m), S 40ft (12m). Bark peels in ribbons. Large, ovate to oblong, silvery-blue leaves are long, narrow and glossy, mid-green when mature. White flowers, consisting of tufts of stamens, are borne in summer–fall, often year-round. Z9–10
E. gunnii (Cider gum) illus. p.68.
E. johnstonii (Tasmanian yellow gum) illus. p.68.
E. niphophila. See *E. pauciflora* subsp. *niphophila*.
E. pauciflora (White Sally) illus. p.79. Z9–10. **subsp. *niphophila*** (syn. *E. niphophila*; Alpine snow gum, Snow gum; illus. p.78). Evergreen, spreading tree. H to 25ft (8m), S 20–50ft (6–15m). Flaking bark reveals yellow, bronze, or greenish patches. The lance-shaped foliage is blue-green, gray-green when young. Bears whitish-cream flowers in summer.
E. perriniana (Round-leaved snow gum, Spinning gum). Fast-growing, spreading tree or large shrub. H 12–30ft (4–10m), S 10–25ft (3–8m). Rounded, gray-blue, young leaves are joined at the bases around stems. Leaves on mature trees are long and pendulous. White flowers are borne in late summer. Z8–10
E. viminalis (Manna gum, Ribbon gum). Vigorous, spreading tree. H 100ft (30m), S 50ft (15m). Bark peels on upper trunk. Lance-shaped, dark green leaves become very long, narrow and pale green when mature. Bears clusters of stamened, white flowers in summer. Z8–10

EUCHARIS

AMARYLLIDACEAE

Genus of evergreen bulbs, grown for their fragrant, white flowers which resemble large, white daffodils, with a cup and 6 spreading petals. Frost tender. Prefers at least 50% relative humidity. Needs partial shade and humus-rich soil. Water freely in summer. Propagate by seed when ripe or by offsets in spring.
E. amazonica illus. p.414.

EUCOMIS
Pineapple flower, Pineapple lily

ASPARAGACEAE

Genus of summer- and fall-flowering bulbs, grown for their dense spikes of flowers, which are overtopped by a tuft of small, leaflike bracts, as in a pineapple. Where marginally hardy, protect with dead bracken or loose, rough peat. Needs full sun and well-drained soil. Plant in spring and water freely in summer. Propagate by seed or division of clumps in spring.
E. autumnalis, syn. *E. undulata*. Late summer- to fall-flowering bulb. H 8–12in (20–30cm), S 8in (20cm). Has strap-shaped, wavy-edged leaves in a semierect, basal tuft. Leafless stem bears small, star-shaped, pale greenish-white flowers in a dense spike, with a cluster of leaflike bracts at apex. Z7–10
E. bicolor illus. p.412.
E. comosa, syn. *E. punctata*, illus. p.409. **'Sparkling Burgundy'** has glossy, dark purple-brown leaves and flower stems. Dense purple buds open to creamy-white flowers that flush rose-purple as they age. Z8–11
E. pole-evansii (Giant pineapple flower). Vigorous bulb. H 2⅔–5ft (0.8–1.5m), S 1ft (30cm). Light green leaves are strap-shaped and wavy-edged. A long spike of greenish-white flowers opens in late summer. Z6–10
E. punctata. See *E. comosa*.
E. undulata. See *E. autumnalis*.
E. vandermerwei. Late summer-flowering bulb. H 6in (15cm), S 10in (25cm). Has long, lance-shaped, purple-spotted, mid-green leaves in rosettes. Short flower spikes bear dark, purplish-brown flowers. Z8–11

EUCRYPHIA

CUNONIACEAE

Genus of evergreen, semievergreen or deciduous trees and shrubs, grown for their foliage and often fragrant, white flowers. Needs a sheltered, semishaded position in all but mild, wet areas, where it will withstand more exposure. Does best with roots in a cool, moist, shaded site and crown in sun. Needs fertile, well-drained, non-alkaline soil, except for *E. cordifolia* and *E.* x *nymansensis*. Propagate by semiripe cuttings in late summer.
E. cordifolia (Ulmo) illus. p.73.
E. glutinosa illus. p.85.
***E.* x *intermedia* 'Rostrevor'.** Upright, evergreen tree. H 33ft (10m), S 20ft (6m). Oblong leaves sometimes have 3 leaflets and are dark green, pale beneath, with red shoots. Shallowly cup-shaped, white flowers open from late summer to fall. Z7–10
E. lucida illus. p.85.
E. milliganii illus. p.129.
***E.* x *nymansensis* 'Nymansay'** illus. p.73.

Eugenia australis of gardens. See *Syzygium paniculatum*.
Eugenia paniculata. See *Syzygium paniculatum*.
Eugenia ugni. See *Ugni molinae*.
Euodia. See *Tetradium*.

EUONYMUS
Spindle tree

CELASTRACEAE

Genus of evergreen, semievergreen, or deciduous shrubs and trees, sometimes climbing, grown for their foliage, fall color and fruits. Needs sun or semishade and any well-drained soil, although, for evergreen species in full sun, soil should not be very dry. Propagate by greenwood or semiripe cuttings in summer or by seed in fall. *E. europaeus* and *E. japonicus* may be attacked by caterpillars; *E. japonicus* is susceptible to mildew. ⓘ All parts may cause mild stomach upset if ingested.
E. alatus (Burning bush) illus. p.140. **'Compactus'** is a deciduous, bushy, dense shrub. H 3ft (1m), S 10ft (3m). Shoots have corky wings. Ovate, dark green leaves turn brilliant red in fall. Bears inconspicuous, greenish-white flowers in summer, followed by small, 4-lobed, purple or red fruits. Z3–9
E. cornutus, syn. *E. clivicolus* (illus. p.142). Tall, bamboolike shrub with slender, drooping branches. H 12ft (4m), S 6ft (2m). Produces linear or oblong, sparsely toothed, and pointed leaves. Bears varying numbers of reddish-brown to purple flowers in spring, followed by winged or horned, pink fruit, and orange-red seeds in fall. Z9–10. **var. *quinquecornutus*** is a deciduous, spreading, open shrub. H 6ft (2m), S 10ft (3m). Has narrowly lance-shaped, dark green leaves. Small, purplish-green flowers in summer are followed by showy, 5-horned, pink fruits that open to reveal orange-red seeds.
***E. europaeus* 'Red Cascade'** illus. p.140.
E. fortunei. Evergreen shrub, grown only as **var. *radicans*** and its cultivars, which are climbing or prostrate. H 15ft (5m) if supported, S indefinite. Bears ovate, dark green leaves and inconspicuous, greenish-white flowers from early to midsummer. Provides good groundcover. Z6–9.
'Emerald Gaiety', H 3ft (1m), S 5ft (1.5m), is bushy, with rounded, white-edged, deep green leaves. **'Emerald 'n' Gold'** illus. p.167. **'Gold Tip'** see *E.f.* 'Golden Prince'. Young, rounded leaves of **'Golden Prince'** (syn. *E.f.* 'Gold Tip') are edged bright yellow, aging to creamy-white. **'Kewensis'**, H 4in (10cm) or more, has slender stems and tiny leaves, and forms dense mats of growth. **'Silver Queen'** illus. p.144. **'Sunspot'** bears deep green leaves, each marked in center with golden-yellow. **'Wolong Ghost'** is prostrate or scandent, with narrow, silver-veined leaves.
E. hamiltonianus (illus. p.142). Deciduous, treelike shrub or small tree, sometimes semievergreen. H and S 25ft (8m). Ovate, mid-green leaves often turn pink and red in fall. Tiny, green flowers in late spring and early summer are followed by 4-lobed, rose-pink fruits enclosed in a bright red casing. Z5–9. **subsp. *sieboldianus*** (syn. *E. yedoensis*; illus. p.142), H and S 20ft (6m) or more, has pink fruits. **subsp. *sieboldianus* 'Red Elf'** illus. p.140.
E. japonicus (Japanese spindle). **'Latifolius Albomarginatus'** (syn. *E.j.* 'Macrophyllus Albus') illus. p.144. **'Macrophyllus'** is an evergreen, upright, dense shrub. H 12ft (4m), S 6ft (2m). Has large, ovate, glossy, dark green leaves and, in summer, small, star-shaped, green flowers, followed by spherical, pink fruits with orange seeds. Good for hedging, particularly in coastal areas. **'Macrophyllus Albus'** see *E.j.* 'Latifolius Albomarginatus'. Leaves of **'Ovatus Aureus'** are broadly edged with golden-yellow. Z6–8
E. latifolius illus. p.140.
E. myrianthus illus. p.117.
E. oxyphyllus illus. p.117.
E. planipes, syn. *E. sachalinensis* of gardens. Deciduous, upright, shrub. H and S 10ft (3m). Bears ovate, mid-green leaves that turn to brilliant red in fall, as

large, 4- or 5-lobed, red fruits open to reveal bright orange seeds. Star-shaped, green flowers open in late spring. Z5–9
E. sachalinensis of gardens. See *E. planipes*.
***E. yedoensis*.** See *E. hamiltonianus* subsp. *sieboldianus*.

EUPATORIUM

Hemp agrimony

ASTERACEAE/COMPOSITAE

Genus of annuals, herbaceous perennials, subshrubs and evergreen shrubs, grown mainly for their flowers, some also for their architectural foliage. Most species from this formerly large genus have been transferred to other genera, including *Ageratina* and *Bartlettina*. Some tall American species, commonly known as Joe Pye weeds, have been transferred to *Eutrochium*. Requires full light or partial shade. Will grow in any conditions, although most species prefer moist but well-drained soil. Water containerized plants freely when in full growth, moderately at other times. Prune shrubs lightly after flowering or in spring. Propagate by seed in spring; shrubs and subshrubs may also be propagated by softwood or greenwood cuttings in summer, perennials by division in early spring or fall. Slugs and aphids may be troublesome.
***E. ageratoides*.** See *Ageratina altissima*.
***E. ianthinum*.** See *Bartlettina sordida*.
***E. ligustrinum*.** See *Ageratina ligustrina*.
E. maculatum (Joe Pye weed). Stately, upright perennial. H to 7ft (2.2m), S to 3ft (1m). Ovate leaves are arranged in whorls along purplish stems. Terminal heads of tubular, pinkish-purple flowers are borne from late summer to early fall. Z5–11.
'Riesenschirm' illus. p.221
***E. micranthum*.** See *Ageratina ligustrina*.
***E. rugosum*.** See *Ageratina altissima*.
***E. sordidum*.** See *Bartlettina sordida*.
***E. urticifolium*.** See *Ageratina altissima*.
***E. weinmannianum*.** See *Ageratina ligustrina*.

EUPHORBIA

Milkweed, Spurge

EUPHORBIACEAE

Very variable genus of annuals, biennials, sometimes semievergreen or evergreen perennials, and deciduous or evergreen subshrubs, shrubs, and succulents. Flower heads usually consist of cup-shaped bracts, in various colors, and usually each contain several flowers lacking typical sepals and petals. Does best in sun or partial shade; depending on species, requires light or moist and well-drained, or permanently moist soil. Propagate by basal cuttings in spring or summer, by division in spring or by seed in fall or spring. ⓘ All parts may cause severe discomfort if ingested; contact with their milky sap may irritate skin.
E. amygdaloides (Wood spurge). **'Purpurea'** is a semievergreen, erect perennial. H and S 1ft (30cm). Stems and narrowly ovate leaves are green, heavily suffused purple-red. Bears flower heads of cup-shaped, yellow bracts in spring. Prone to mildew. **var. *robbiae*** (syn. *E. robbiae*; Mrs. Robb's bonnet) illus. p.262. Z6–10
E. bicompacta* var. *rubra, syn. *Synadenium compactum* var. *rubrum*, *S. grantii* of gardens 'Rubrum'. Evergreen, erect, robust-stemmed shrub. H 10–12ft (3–4m), S 6ft (2m) or more. Produces very small, red flowers in fall, largely concealed by lance-shaped to ovate, glossy, purplish-green leaves, red-purple beneath. Z10–11 (min. 41–50°F/5–10°C)
***E. biglandulosa*.** See *E. rigida*.
***E. candelabrum*.** Deciduous, treelike, perennial succulent. H 30ft (10m), S 15ft (5m). Produces erect, 4–5-angled, deeply indented, glossy, dark green stems, often marbled white, that branch and rebranch candelabralike. Has short-lived, spear-shaped leaves. Rounded heads of small flowers, with cup-shaped, yellow bracts, are borne in spring. Z10–11 (min. 54°F/12°C)
E. characias* subsp. *characias and **subsp. *wulfenii*** illus. p.147.
E. cyparissias (Cypress spurge) illus. p.262.
E. epithymoides, syn. *E. polychroma*, illus. p.262.
E. fulgens (Scarlet plume). Deciduous shrub of erect, open habit, with slender stems that arch at the tips. H 3–5ft (1–1.5m), S 2–3ft (60cm–1m). Has elliptic to lance-shaped, mid- to deep green leaves, to 4in (10cm) long. From winter to spring, bears leafy, wandlike sprays of small flowers, each cluster surrounded by 5 petallike, scarlet bracts, ¾–1¼in (2–3cm) across. Z14–15 (min. 55–59°F/13–15°C)
E. gorgonis (Gorgon's head). Deciduous, hemispherical, perennial succulent. H 3in (8cm), S 4in (10cm). Has a much-ribbed, green main stem crowned by 3–5 rows of prostrate, ½in (1cm) wide stems that are gradually shed. In spring, crown also bears rounded heads of small, fragrant flowers with cup-shaped, yellow bracts. Z14–15 (min. 50°F/10°C)
***E. griffithii* 'Fireglow'** illus. p.246.
***E. hypericifolia* Diamond Frost ('Inneuphe')** illus. p.298.
***E.* 'Inneuphe'.** See *E. hypericifolia* Diamond Frost ('Inneuphe').
E. marginata (Snow-in-summer, Snow-on-the-mountain) illus. p.299.
E. mellifera (Honey spurge) illus. p.127.
E. milii (Crown of thorns) illus. p.456.
var. *splendens* (syn. *E. splendens*) is a slow-growing, mainly evergreen, spreading, spiny, semisucculent shrub, with semiprostrate to scrambling stems. H to 6ft (2m), S to 3ft (1m). Has oblong to ovate leaves and, intermittently year-round but especially in spring, clusters of tiny flowers enclosed in large, petallike, red bracts. Z11–12 (min. 45–50°F/7–10°C)
E. myrsinites illus. p.357.
***E. nicaeensis*.** Clump-forming perennial with a woody base. H 30in (75cm), S 18in (45cm). Has narrowly ovate, fleshy, gray-green leaves. Umbels of greenish-yellow flower heads with cup-shaped bracts are borne throughout summer. Z5–8
E. obesa (Living baseball) illus. p.493.
***E. palustris*.** Bushy perennial. H and S 3ft (1m). Clusters of deep yellow flower heads with cup-shaped bracts are produced in spring above oblong to lance-shaped, yellowish-green leaves. Z7–9
***E. polychroma*.** See *E. epithymoides*.
E. pulcherrima (Mexican flame leaf, Poinsettia), illus. p.455. **'Paul Mikkelson'** is a mainly evergreen, erect, freely branching shrub. H and S 10–12ft (3–4m). Bears ovate to lance-shaped, sometimes shallowly lobed leaves. From late fall to spring, produces flattened heads of small, greenish-white flowers with large, leaflike, bright red bracts. Z13–15 (min.55–59°F/13–15°C)
E. rigida, syn. *E. biglandulosa*, illus. p.227.
***E. robbiae*.** See *E. amygdaloides* var. *robbiae*.
E. schillingii illus. p.251.
***E. seguieriana*.** Clump-forming, semievergreen perennial. H and S 18in (45cm). Has narrow, lance-shaped, glaucous leaves on slender stems. Bears large, terminal clusters of yellowish-green flowers in late summer and early fall. Z8–11
E. sikkimensis illus. p.242.
***E. splendens*.** See *E. milii* var. *splendens*.
E. tithymaloides, syn. *Pedilanthus tithymaloides*. Bushy, perennial succulent. H 10ft (3m), S 1ft (30cm). Has thin, erect stems zigzagging at each node. Leaves are mid-green and boat-shaped, with prominent ribs beneath. Red to yellowish-green bracts are produced at each of the stem tips in summer. Prefers partial shade. Z10–11. (min. 50°F/10°C). **'Variegata'** (Redbird flower) illus. p.483.

EURYALE

Fox nuts, Gorgon plant

NYMPHAEACEAE

Genus of one species of aquatic, deep-water perennial, grown as an annual for its floating foliage; is suitable only for a tropical pond. Frost tender. Needs full light, constant warmth and heavy feeding. Propagate by seed in spring.
***E. ferox*.** Annual, deep-water plant. S 5ft (1.5m). Has floating, rounded, spiny, olive-green leaves with rich purple undersides and bears small, red or violet-purple, shuttlecocklike flowers in summer. Z12–15 (min. 41°F/5°C)

EURYBIA

ASTERACEAE/COMPOSITAE

Genus of herbaceous, perennial daisies, similar to Michaelmas daisies (mostly *Symphyotrichum novae-angliae* and *S. novi-belgii* cultivars), but with heart-shaped leaves and longer flowers; *Eurybia* cultivars also have no sterile rosettes when flowering. Prefers sun or partial shade and fertile, well-drained soil, with adequate moisture in summer. Propagate by seed in spring or division in spring or fall.
E. divaricata, syn. *Aster divaricatus*. Spreading, upright perennial. H 16in (40cm), S 1ft (30cm). Has pointed, ovate, toothed, glossy, dark green leaves. In late summer, purplish-black, wiry, branching, arching stems bear daisylike, white flower heads. Best in shade, where it provides good groundcover. Z6–10

EURYOPS

ASTERACEAE/COMPOSITAE

Genus of annual, perennials and evergreen shrubs and subshrubs, grown for their attractive leaves and showy, daisylike flower heads. Suitable for borders and rock gardens. Needs sun and moist but well-drained soil. May not tolerate root disturbance. Propagate by softwood cuttings in late spring.
E. acraeus, syn. *E. evansii* of gardens, illus. p.344.
E. evansii of gardens. See *E. acraeus*.
E. pectinatus illus. p.319.

EUSTOMA

syn. LISIANTHUS

GENTIANACEAE

Genus of annuals, biennials, and perennials with poppylike flowers that are good for cutting. Ideal for containers. Frost tender. Needs sun and well-drained soil. Propagate by seed sown under glass in late winter.
E. grandiflorum, syn. *E. russellianum*, *Lisianthus russellianus* (Texan bluebell), illus. p.299. **Heidi Series** produces flowers in shades of rose-pink, blue, white, and bicolors.
***E. russellianum*.** See *E. grandiflorum*.

***Evodia*.** See *Tetradium*.

EXACUM

GENTIANACEAE

Genus of annuals, biennials and perennials, grown for their profusion of fragrant flowers. Excellent for containers. Frost tender. Grow in sun and in well-drained soil. Propagate by seed sown in early spring for flowering the same year or in late summer for the following year.
E. affine (Persian violet). Evergreen, bushy perennial, usually grown as an annual. H and S 8–12in (20–30cm). Has ovate, glossy leaves and abundant, tiny, scented, saucer-shaped, purple, rose-pink or white flowers, with yellow stamens, in summer. Z10–12 (min. 45–50°F/7–10°C)

EXOCHORDA

Pearl bush

ROSACEAE

Genus of deciduous shrubs, grown for their abundant, showy, white flowers. Does best in full sun and fertile, well-drained soil. Improve vigor and flowering by thinning out old shoots after flowering. Propagate by softwood cuttings in summer or by seed in fall. Chlorosis may be a problem on shallow, chalky soil.
***E. giraldii*.** Deciduous, widely arching shrub. H and S 10ft (3m). Has pinkish-green, young growths and oblong leaves. Bears upright racemes of large, 5-petaled, white flowers in late spring. Z6–9
***E.* x *macrantha* 'The Bride'** illus. p.132.
***E. racemosa*.** Deciduous, arching shrub. H and S 12ft (4m). Has upright clusters of 5-petaled, white flowers in late spring. Leaves are oblong and deep blue-green. Prefers acidic soil. Z5–9

F

FABIANA

SOLANACEAE

Genus of heathlike, evergreen shrubs, grown for their foliage and flowers. Where marginally hardy, plant in a sheltered position. Requires full sun and fertile, well-drained soil. Propagate by softwood cuttings in summer.

F. imbricata* 'Prostrata'.** Evergreen, low-growing, mound-forming, very dense shrub. H 3ft (1m), S 6ft (2m). Shoots are densely covered with tiny, heathlike, deep green leaves. Bears profuse, tubular, white flowers in early summer. **f. *violacea (syn. *F.i.* 'Violacea') illus. p.204.

FAGUS

Beech

FAGACEAE

Genus of deciduous trees, grown for their habit, foliage and fall color. Insignificant flowers are borne in late spring and hairy fruits ripen in fall to release edible, triangular nuts. Needs sun or semishade; purple-leaved forms prefer full sun, yellow-leaved forms a little shade. Grows well in any but waterlogged soil. Trim *F. sylvatica* in summer, when used as hedging. Propagate species by seed sown in fall, selected forms by budding in late summer. Bracket fungi, canker-causing fungi, aphids and beech coccus may cause problems.

***F. americana*.** See *F. grandifolia*.

F. grandifolia, syn. *F. americana* (American beech). Deciduous, spreading tree. H and S 30ft (10m). Ovate, silky, pale green young leaves mature to dark green in summer, then turn golden-brown in fall. Z3–9

F. orientalis (Oriental beech). Deciduous, spreading tree. H 70ft (20m), S 50ft (15m). Large, ovate, wavy-edged, dark green leaves turn yellow-brown in fall. Z4–7

F. sylvatica (European beech) illus. p.64.

'Aspleniifolia' see *F.s.* var. *heterophylla* 'Aspleniifolia'. **f. *atropunicea*** see *F.s.* Atropurpurea Group. **Atropurpurea Group** (syn. *F.s.* f. *atropunicea*, *F.s.* f. *purpurea;* Copper beech) is a deciduous, round-headed tree, H 80ft (25m), S 50ft (15m), with ovate, wavy-margined, purple leaves, turning a rich copper in fall.

'Aurea Pendula' is a deciduous, slender tree with pendulous branches. H 30ft (10m), S 5ft (1.5m). Ovate, wavy-edged, bright yellow leaves turn rich yellow and orange-brown in fall. **'Dawyck'** illus. p.79.

'Dawyck Gold' is compact and columnar, with bright yellow young foliage, turning green; H 50ft (15m), S 6ft (2m). **'Dawyck Purple'** is similar to 'Dawyck', but has deep purple foliage. **var. heterophylla 'Aspleniifolia'** (syn. *F.s.* 'Asplenifolia'; Fern-leaved beech) illus. p.64. **'Pendula'** (syn. *F.s.* f. 'Pendula'; Weeping beech) illus. p.62. **f. *pendula*** see *F.s.* 'Pendula'.

'Purple Fountain' has upright leaders with narrow, weeping branches; H 30ft (10m), S 12ft (4m).

f. *purpurea* see *F.s.* Atropurpurea Group.

'Purpurea Pendula', H and S 10ft (3m), has stiff, weeping branches and blackish-purple foliage. **'Riversii'** illus. p.61.

'Rohanii' illus. p.61. **'Zlatia'** has yellow, young foliage, later turning mid- to dark green. Z5–7

FALLOPIA

SYN. BILDERDYKIA, REYNOUTRIA

POLYGONACEAE

Genus of rhizomatous, scrambling or climbing, woody-based perennials, good for training on pergolas and deciduous trees. Grow in full sun or partial shade and moist but well-drained soil. Propagate by seed sown as soon as ripe or in spring, or by semiripe cuttings in summer, or hardwood cuttings in fall.

***F. aubertii*.** See *F. baldschuanica*.

F. aubertii of gardens. See *F. baldschuanica*.

F. baldschuanica, syn. *F. aubertii, F. aubertii* of gardens, *Polygonum baldschuanicum* (Mile-a-minute plant, Russian vine), illus. p.208.

FALLUGIA

ROSACEAE

Genus of one species of deciduous shrub, grown for its flowers and showy fruit clusters. Where marginally hardy, needs protection in winter. Requires a hot, sunny position and well-drained soil. Propagate by softwood cuttings taken in summer or by seed sown in fall.

F. paradoxa (Apache plume) illus. p.128.

FARFUGIUM

ASTERACEAE/COMPOSITAE

Genus of rhizomatous, evergreen perennials, grown for their foliage and daisylike flower heads. Grow in sun or semishade and in moist but well-drained soil. Propagate by division in spring or by seed in fall or spring.

F. japonicum, syn. *Ligularia tussilaginea*. Loosely clump-forming perennial. H and S 2ft (60cm). Has large, rounded, toothed, basal, mid-green leaves, above which rise woolly, branched stems bearing clusters of daisylike, pale yellow flower heads in late summer. Z7–9. **'Aureomaculatum'** (Leopard plant) has variegated, gold-and-white leaves.

FARGESIA

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.

F. murieliae, syn. *Arundinaria murieliae, Sinarundinaria murieliae, Thamnocalamus spathaceus* of gardens (Umbrella bamboo). Evergreen, clump-forming bamboo. H 12ft (4m), S indefinite. Has attractive, gray young culms with loose, light brown sheaths and broad, apple-green leaves, each very long, drawn-out at its tip. Flower spikes are unimportant. Z5–9

F. nitida, syn. *Arundinaria nitida, Sinarundinaria nitida* (Fountain bamboo). Evergreen, clump-forming bamboo. H 15ft (5m), S indefinite. Has small, pointed, mid-green leaves on dark purple stalks and several branches at each node. Stems are often purple with close sheaths. Z5–9.

FASCICULARIA

BROMELIACEAE

Genus of one species of evergreen, rosette-forming perennial, with no or short stems, grown for its overall appearance. Prefers full light and well-drained soil. Water moderately from spring to fall, sparingly in winter. Propagate by offsets or division in spring.

***F. andina*.** See *F. bicolor*.

F. bicolor, syn. *F. andina*. Perennial forming congested hummocks. H to 18in (45cm), S to 2ft (60cm). Has dense rosettes of linear, tapered, arching, mid- to deep green leaves; the inner leaves are bright scarlet at flowering. In summer, produces a cluster of tubular, pale blue flowers, surrounded by white bracts, at the heart of each mature rosette. Best grown at not less than 2°C (36°F). Z10–13

x FATSHEDERA

ARALIACEAE

Hybrid genus (*Fatsia japonica* 'Moseri' x *Hedera helix* 'Hibernica') of one evergreen, fall-flowering shrub, grown for its foliage. Good trained against a wall or pillar or, if supported by canes, cultivated as a houseplant. Thrives in a sunny or shaded position and in fertile, well-drained soil. Propagate by semiripe cuttings in summer.

x *F. lizei* (Tree ivy) illus. p.211.

'Annemieke' (syn. x *F.l.* 'Lemon and Lime') is an evergreen, mound-forming, loose-branched shrub that may also be trained as a climber. H 4–6ft (1.2–2m), S 10ft (3m). Produces deeply lobed, glossy, deep green leaves, variegated with yellow. Sprays of small, white flowers are borne in fall. **'Lemon and Lime'** see x *F.l.* 'Annemieke'. **'Variegata'**, H 5ft (1.5m), or more if trained as a climber, has leaves, narrowly edged with creamy-white. Z8–11

FATSIA

ARALIACEAE

Genus of 2 or 3 species of evergreen, fall-flowering shrubs or small trees, grown for their foliage, flowers and fruits. Excellent for conservatories. Where marginally hardy, shelter from strong winds. Tolerates sun or shade and requires fertile, well-drained soil. Propagate by semiripe cuttings taken in summer, or by seed sown in fall or spring.

F. japonica, syn. *Aralia japonica, A. sieboldii* (Japanese aralia, Japanese fatsia). Evergreen, rounded, dense shrub. H and S 10ft (3m). Has sturdy shoots and very large, rounded, deeply lobed, glossy, dark green leaves. Dense clusters of tiny, white flowers are produced in fall, and these are followed by rounded, black fruits. Z8–10. **'Variegata'** illus. p.144.

***F. papyrifera*.** See *Tetrapanax papyrifer*.

FAUCARIA

Tiger jaws

AIZOACEAE

Genus of clump-forming, almost stemless, sometimes fleshy-rooted, perennial succulents with semicylindrical or 3-angled, fleshy, bright green leaves and yellow, pink, or white flowers that open in late afternoons in fall. Buds and dead flowers may appear orange or red. Frost tender. Requires full sun and well-drained soil. Keep dry in winter and water sparingly in spring. Propagate by seed or stem cuttings in spring or summer.

F. tigrina illus. p.495.

***Feijoa*.** See *Acca*.

FELICIA

SYN. AGATHAEA

Blue daisy

ASTERACEAE/COMPOSITAE

Genus of annuals, perennials, evergreen subshrubs and (rarely) shrubs, grown for their daisylike, mainly blue flower heads. Requires a position in full sun and well-drained soil. Water potted plants moderately, less when not in full growth; dislikes wet conditions, particularly in low temperatures. Cut off dead flowering stems and cut back straggly shoots regularly. Propagate by seed in spring, or by greenwood cuttings in summer or early fall.

F. amelloides, syn. *Aster amelloides, A. capensis, A. coelestis* (Blue daisy). Bushy subshrub, often grown as an annual. Bears ovate to oblong, deep green leaves, and light to deep blue flower heads from summer to fall. Z8–11. **'Santa Anita'** illus. p.157.

F. bergeriana (Kingfisher daisy). Fairly fast-growing, mat-forming annual. H and S 6in (15cm). Produces lance-shaped, hairy, gray-green leaves and small, daisylike, blue flower heads, with yellow centers, that open only in sunshine in summer and early fall. Z11

FENESTRARIA

AIZOACEAE

Genus of one species of variable, dwarf, stemless, cushion-forming, perennial succulent. Club-shaped, fleshy leaves have gray 'windows' in their flattened tips. Frost tender. Requires sun and very well-drained soil. Keep bone dry in winter. Propagate by seed in spring or summer.

***F. aurantiaca*.** See *F. rhopalophylla* subsp. *aurantiaca*.

F. rhopalophylla*.** Clump-forming, perennial succulent. H 2in (5cm), S 8in (20cm). Forms open cushions of erect, club-shaped, glossy, glaucous to mid-green leaves, each with a flattened tip. Bears daisylike, white flowers on long stems in late summer and fall. Z13–15. (min. 41°F/5°C). **subsp. *aurantiaca (syn. *F. aurantiaca*; Baby's toes) illus. p.495.

FEROCACTUS

CACTACEAE

Genus of slow-growing, flattened, spherical, perennial cacti, becoming columnar after many years. Frost tender. Needs full sun and very well-drained soil. Propagate by seed in spring or summer. Treat blackened areoles with systemic fungicide and ensure plants have good ventilation.

***F. acanthodes*.** See *F. cylindraceus*.

***F. chrysacanthus*.** Slow-growing,

spherical, perennial cactus. H 3ft (1m), S 2ft (60cm). Green stem, with 13–22 ribs, is fairly densely covered with curved, yellow-white spines. In summer bears funnel-shaped, yellow, rarely red, flowers, 2in (5cm) across, only on plants 10in (25cm) or more across. Z12–15 (min. 41°F/5°C)
F. cylindraceus, syn. *F. acanthodes*, illus. p.494.
F. hamatacanthus, syn. *Hamatocactus hamatacanthus*, illus. p.486.
***F. latispinus*.** Slow-growing, flattened spherical, perennial cactus. H 8in (20cm), S 16in (40cm). Grayish-green stem, with 15–23 ribs, has broad, hooked, red or yellow spines. In summer, funnel-shaped, pale yellow, white, purple, or red flowers are borne on plants over 4in (10cm) wide. Z13–15 (min. 41°F/5°C)
***F. setispinus*.** See *Thelocactus setispinus*.
***F. wislizenii*.** Slow-growing, spherical, perennial cactus, columnar with age. H 6ft (2m), S 3ft (1m). Grayish-green stem, with up to 25 ribs, is covered in flattened, fish-hook, usually reddish-brown spines, to 2in (5cm) long. Funnel-shaped, orange or yellow flowers are produced in late summer, on plants over 10in (25cm) wide, which should attain this size 10–15 years after raising from seed. Z13–15 (min. 41°F/5°C)

FERRARIA

IRIDACEAE

Genus of spring-flowering corms, grown for their curious, malodorous, short-lived flowers, which are pollinated by flies. Flowers are iris-shaped with crisped margins to the petals. Requires full sun and well-drained soil. Plant in fall, water during winter, and dry off after flowering. Dies down in summer. Propagate by division in late summer or by seed in fall.
F. crispa, syn. *F. undulata*, illus. p.407.
***F. undulata*.** See *F. crispa*.

FERULA

Giant fennel

APIACEAE/UMBELLIFERAE

Genus of mainly summer-flowering perennials, grown for their architectural form. Not to be confused with the culinary fennel, *Foeniculum*. Suitable for the back of a border, or as a specimen plant in a wild garden. Needs sun and well-drained soil. Sow seed when fresh, in late summer.
F. communis (Giant fennel) illus. p.219.

FESTUCA

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
F. glauca (Blue fescue, Gray fescue). Evergreen, tuft-forming, perennial grass. H and S to 1ft (30cm). Has arching or erect, narrow, linear, inrolled, blue-green leaves. In summer, produces panicles, to 4in (10cm) long, with spikelets of violet-flushed, blue-green flowers. Good for edging. Z4–8. Leaves of **'Elijah Blue'** are vivid blue. **'Golden Toupee'** is semievergreen with bright yellow-green leaves.

FICARIA

Lesser celandine

RANUNCULACEAE

Genus of low-growing, herbaceous perennials, grown for their early spring flowers. Originally considered to be part of *Ranunculus* (buttercups), molecular research has now shown that *F. verna* and 3 other closely related species are genetically distinct. Grow *F. verna* in full sun or partial shade, in moist soil, but do not over-water. Propagate by division in spring or fall, or sow seed in spring. Good for a wild garden or under trees, but can be invasive. ⓘ All species are poisonous.
F. verna, syn. *Ranunculus ficaria* (Lesser celandine, Pilewort). Clump-forming, very variable, tuberous perennial. H 2in (5cm), S to 1ft (30cm). The basal, heart-shaped, scalloped or toothed, glossy, dark green leaves wither after flowering. In early spring, produces shallowly cup-shaped, brilliant golden-yellow flowers, ¼–2in (2–5cm) across, that age to white. Z4–8.
var. *albus* (syn. *Ranunculus ficaria* var. *albus*) illus. p.349. **var. *aurantiacus*** (syn. *Ranunculus ficaria* var. *aurantiacus*) illus. p.359. **'Brazen Hussy'** has heart-shaped, purple-bronze leaves and glossy, sulfur-yellow flowers, bronze on the reverse.
Flore Pleno Group (syn. *Ranunculus ficaria* 'Flore Pleno', *Ranunculus ficaria* var. *flore-pleno*) illus. p.357.

FICUS

MORACEAE

Genus of deciduous or mainly evergreen trees, shrubs and woody, scrambling or root climbers, grown for their foliage and to provide shade; a few species also for their fruit. All bear insignificant clusters of flowers in spring or summer. Prefers full light or partial shade and fertile, well-drained soil. Water containerized specimens moderately, very little when temperatures are low. Propagate by seed in spring or by leaf-bud or stem-tip cuttings or air-layering in summer. Red spider mite may be a nuisance. ⓘ The foliage may cause mild stomach upset if ingested; the sap may irritate skin and eyes and may aggravate allergies.
F. benghalensis (Banyan) illus. p.452.
F. benjamina (Weeping fig). Evergreen, weeping tree or large shrub, often with aerial roots. H 100ft (30m), S to 50ft (15m) or more. Slender, ovate leaves, 2–5in (5–13cm) long, are a lustrous, rich green. Z10–11. (min. 50°F/10°C). **'Variegata'** illus. p.450.
F. deltoidea (Mistletoe fig) illus. p.458.
F. elastica (India rubber fig, India rubber tree, Rubber plant). **'Decora'** is a strong-growing, evergreen, irregularly ovoid tree. H to 100ft (30m), S 50–70ft (15–20m). Has broadly elliptic, leathery, lustrous, deep green leaves, red-flushed beneath, with creamy-white midribs. **'Doescheri'** (Rubber plant) illus. p.450. Leaves of **'Variegata'** are cream-margined, mottled with gray-green.Z14–15 (min. 59°F/15°C)
F. lyrata (Banjo fig, Fiddle-leaf fig) illus. p.452.
F. macrophylla (Australian banyan, Moreton Bay fig). Evergreen, wide-spreading, dense tree with a buttressed trunk when mature. H 100–180ft (30–55m), S 70–130ft (20–40m). Ovate leaves, to 8in (20cm) long, are leathery, glossy, deep green. Z11–12 (min. 50°F/10°C)
F. pumila, syn. *F. repens* (Climbing fig, Creeping fig). Evergreen, root climber. H 25ft (8m), 5ft (1.5m) as a pot-grown plant. Bright, glossy green leaves are heart-shaped when young, leathery and ovate when mature. Unpalatable fruits are 2½in (6cm) long, green and white-spotted at first, then flushed red-purple. Only reaches adult stage in very warm regions or under glass. Pinch out branch tips to encourage branching. Z9–11. (min. 41°F/5°C). The leaves of **'Variegata'** are irregularly margined in white.
***F. repens*.** See *F. pumila*.
F. rubiginosa (Port Jackson fig). Evergreen, dense-headed tree with a buttressed trunk. H and S 50ft (15m) or more. Oblong to elliptic or ovate leaves, to 4in (10cm) long, are glossy, dark green above, usually with rust-colored down beneath. Z14–15 (min 50–55°F/10–13°C)

FILIPENDULA

Meadowsweet

ROSACEAE

Genus of spring- and summer-flowering, rhizomatous perennials, grown for their plumes of tiny, fluffy, red, pink or white flowers. Most grow in full sun or partial shade, in moist but well-drained, leafy soil; some species (such as *F. rubra*) will thrive in boggy sites. *F. vulgaris* needs a drier site, in full sun. Propagate by seed in fall or by division in fall or spring.
F. camtschatica, syn. *F. kamtschatica*. Clump-forming perennial. H to 5ft (1.5m), S 3ft (1m). In midsummer, produces frothy, flat heads of scented, star-shaped, white or pale pink flowers above large, lance-shaped, pinnate leaves. Z3–9
***F. hexapetala*.** See *F. vulgaris*. **'Flore Pleno'** see *F. vulgaris* 'Multiplex'.
***F. kamtschatica*.** See *F. camtschatica*.
***F. palmata* 'Rosea'** of gardens**.** See *F. rubra* 'Venusa'.
***F. palmata* 'Rubra'** of gardens. See *F. purpurea*.
F. purpurea, syn. *F. palmata* 'Rubra' of gardens, illus. p.238.
F. rubra illus. p.438. **'Venusta'** (syn. *F. palmata* 'Rosea' of gardens) is a spreading perennial, forming large clumps in moist soil. H 6–8ft (1.8–2.5m), S 4ft (1.2m). Has pinnate, irregularly cut leaves, with toothed leaflets. In early and mid-summer, branched stems bear deep rose-pink flowers that age to pale pink. Z3–9
F. ulmaria, syn. *Spiraea ulmaria* (Meadowsweet), illus. p.436. Z5–9. **'Aurea'** illus. p.274.
F. vulgaris, syn. *F. hexapetala* (Dropwort). **'Multiplex'** (syn. *F. hexapetala* 'Flore Pleno') is an upright, rosette-forming perennial with fleshy, swollen roots. H 3ft (1m), S 1½ft (45cm). In summer, bronze buds open to flat heads of rounded, double, sometimes pendent, creamy-white flowers, above fernlike, finely divided, toothed, hairless, dark green leaves. Z4–7

FIRMIANA

MALVACEAE

Genus of deciduous trees and shrubs, grown for their foliage and to provide shade. To reach tree proportions, needs min. 36–41°F (2–5°C). Requires well-drained but moisture-retentive, fertile soil and full light or partial shade. Water containerized specimens freely when in full growth, less in winter. Pruning is tolerated if necessary. Propagate by seed when ripe or in spring.
***F. platanifolia*.** See *F. simplex*.
F. simplex, syn. *F. platanifolia, Sterculia platanifolia* (Chinese parasol tree), illus. p.451.

FITTONIA

Nerve plant, Painted net leaf

ACANTHACEAE

Genus of evergreen, creeping perennials, grown mainly for their foliage. Useful as groundcover. Frost tender. Needs a fairly humid atmosphere. Grow in shade and well-drained soil; keep well watered but avoid waterlogging, especially in winter. Cut back straggly plants in spring. Propagate in spring or summer, with extra heat, by division or stem cuttings.
***F. albivenis* Argyroneura Group**, syn. *F. argyroneura* (Silver net leaf), illus. p.468.
Verschaffeltii Group (syn. *F. verschaffeltii*) is an evergreen, creeping perennial. H to 6in (15cm), S indefinite. Produces small, ovate, red-veined, olive-green leaves; any flowers that form are best removed. Z14–15 (min. 59°F/15°C)
***F. argyroneura*.** See *F. albivenis* Argyroneura Group.
***F. verschaffeltii*.** See *F. albivenis Verschaffeltii Group*.

FITZROYA

CUPRESSACEAE

See also CONIFERS.
F. cupressoides, syn. *F. patagonica* (Patagonian cypress), illus. p.100.
***F. patagonica*.** See *F. cupressoides*.

FOENICULUM

Fennel

APIACEAE/UMBELLIFERAE

Genus of one species of summer-flowering perennial, grown for its flowers and for its leaves, which are decorative and used for culinary flavouring. Grow in an open, sunny site, in fertile, well-drained soil. Remove flower heads after fading to stop self seeding. Propagate by seed in spring.
F. vulgare (Fennel). **'Bronze'** see *F.v.* 'Purpureum'. **'Purpureum'** (syn. *F.v.* 'Bronze') is an erect, branching perennial. H 6ft (2m), S 1½ft (45cm). Produces very finely divided, hairlike, bronze leaves and, in summer, large, flat umbels of small, yellow flowers. Z6–9

FORSYTHIA

OLEACEAE

Genus of mainly deciduous, sometimes semievergreen, spring-flowering shrubs, grown for their usually profuse, yellow flowers, which are produced before the

leaves emerge. Needs full sun and fertile, well-drained soil. Thin out old shoots and trim hedges immediately after flowering. Propagate by softwood cuttings in summer or by hardwood cuttings in fall or winter.
***F.* x *intermedia*.** Deciduous, bushy shrub. H and S 5ft (1.5m). Has ovate to lance-shaped, sharply toothed, mid-green leaves. Large, deep yellow flowers are produced sparsely from early to midspring. Z6–9.
'Lynwood Variety', H 10ft (3m), is very free-flowering, vigorous and upright; can be used as an attractive, flowering hedge.
Minigold ('Flojor'), H and S 6ft (2m), has oblong, mid-green leaves, and produces abundant, small, 4-lobed, yellow flowers from early to midspring. **'Spectabilis'** illus. p.127. **'Spring Glory'**, H 6ft (2m), S 5ft (1.5m), produces clusters of large, 4-lobed, pale yellow flowers in midspring.
Week End ('Courtalyn'), H 6ft (2m), is very floriferous, with rich yellow flowers, and has a neat, compact habit.
***F.* Marée d'Or ('Courtasol').** Low-growing, spreading shrub. H 2ft (60cm), S 4ft (1.2m). Bears abundant, lemon-yellow flowers in early spring, followed by lance-shaped leaves. Useful groundcover. Z5–8
F. ovata (Korean forsythia). Deciduous, bushy shrub. H and S 5ft (1.5m). Bears broadly ovate, toothed, dark green leaves. Produces small, 4-lobed, bright yellow flowers in early spring. Z4–7. **'Tetragold'** has larger flowers.
F. suspensa (Golden bell) illus. p.195.

FOTHERGILLA

HAMAMELIDACEAE

Genus of low-growing, deciduous, spring-flowering shrubs, grown for their fall color and fragrant flowers, each with a dense, bottlebrushlike cluster of stamens, which open before or as leaves emerge. Grow in sun or semishade, but colors best in full sun. Requires moist, peaty, acidic soil. Propagate by softwood cuttings taken in summer.
F. gardenii (Witch alder) illus p.163.
***F.* x *intermedia* 'Mount Airy'.** Upright, vigorous shrub. H and S 15ft (5m). Leaves are dark blue-green, turning vivid orange-red in fall. Bears white, bottlebrushlike flowers in spring. Z6–10
F. major, syn. *F. monticola*, illus. p.117.
Monticola Group (syn. *F.* Monticola Group) cultivars are deciduous, upright shrubs, lower growing than *F. major*. H 5ft (1.5m), S 4ft (1.2m). Glossy, dark green leaves turn red, orange and yellow in fall. Tufts of fragrant, white flowers are borne in late spring. Z5–8
***F. monticola*.** See *F. major*.
***F.* Monticola Group.** See *F. major* Monticola Group.

***Fragaria indica*.** See *Duchesnea indica*.

FRAILEA

CACTACEAE

Genus of dwarf, flattened spherical to columnar, perennial cacti with tuberculate ribs. Bears short spines, mostly bristlelike. In summer, produces abundant buds, most of which develop into small, spherical, shiny pods without opening. Funnel-shaped flowers are yellow. Frost tender. Needs partial shade and very well-drained soil. Not well-adapted to long droughts. Propagate by seed in spring or summer.
***F. pulcherrima*.** See *F. pygmaea*.
F. pygmaea, syn. *F. pulcherrima*, illus. p.490.

FRANCOA

Bridal wreath

FRANCOACEAE/SAXIFRAGACEAE

Genus of summer- and early fall-flowering, evergreen perennials. Needs full sun and fertile, well-drained soil. Propagate by seed or by division in spring.
***F. appendiculata*.** Rosette-forming perennial. H 2ft (60cm), S 18in (45cm). Racemes of small, bell-shaped, pale pink flowers, spotted with deep pink at base, are borne on graceful, erect stems in midsummer, above oblong to ovate, lobed, hairy, crinkled, dark green leaves. Z6–9
***F. sonchifolia*.** Rosette-forming perennial. H 30in (75cm), S 18in (45cm). Produces racemes of cup-shaped, red-marked, pink flowers in midsummer. Lobed leaves each have a large, terminal lobe. Z7–9.
Rogerson's form, H 2ft (60cm), S 2ft (60cm) or more, produces lance-shaped, dark green leaves and slender, wandlike racemes of star-shaped, light purple flowers in summer. Good for groundcover.

FRANKLINIA

THEACEAE

Genus of one species of deciduous tree or shrub, grown for its flowers and fall color. Thrives only during hot summers. Requires a position in full sun and moist but well-drained, neutral to acidic soil. Propagate by softwood cuttings in summer, by seed in fall, or by hardwood cuttings in early winter.
***F. alatamaha*.** Deciduous, upright tree. H and S 15ft (5m) or more. Large, shallowly cup-shaped, white flowers with yellow stamens are produced in late summer and early fall. Oblong, glossy, bright green leaves turn red in fall. Z6–9

FRAXINUS

Ash

OLEACEAE

Genus of deciduous, rarely evergreen, trees, grown mainly for their habit and foliage of paired leaflets; flowers are usually insignificant. Requires a position in sun and fertile, well-drained but not too dry soil. Propagate species by seed in fall, selected forms by budding in summer.
① Contact with lichens on the bark may aggravate skin allergies.
F. americana (White ash). Fast-growing, deciduous, spreading tree. H 80ft (25m), S 50ft (15m). Leaves are dark green, with 5–9 ovate to lance-shaped leaflets, sometimes turning yellow or purple in fall. Z6–9
***F. angustifolia* 'Raywood'.** See *F. angustifolia* subsp. *oxycarpa* 'Raywood'.
F. angustifolia* subsp. *oxycarpa, syn. *F. oxycarpa* (Narrow-leaved ash). Deciduous, spreading, elegant tree. H 80ft (25m), S 40ft (12m). Leaves usually consist of 9–11 slender, lance-shaped, glossy, dark green leaflets that are golden-yellow in fall. Z6–9.
'Raywood' (Claret ash) illus. p.66.
F. excelsior (Common ash). Vigorous, deciduous, spreading tree. H 100ft (30m), S 70ft (20m). Dark green leaves, with usually 9–11 ovate leaflets, sometimes become yellow in fall. Black leaf buds are conspicuous in winter. Z5–8.
f. *diversifolia* (One-leaved ash) has leaves that are simple or with only 3 leaflets. **'Jaspidea'** illus. p.60.
'Pendula' (Weeping ash) illus. p.79.
***F. mariesii*.** See *F. sieboldiana*.
F. ornus (Manna ash) illus. p.71.
***F. oxycarpa*.** See *F. angustifolia* subsp. *oxycarpa*.
F. sieboldiana, syn. *F. mariesii*. Slow-growing, deciduous, compact-headed tree. H 20ft (6m), S 15ft (5m). Leaves consist of 3–7 ovate, dark green leaflets, each on a purple stalk. Produces clusters of small, fragrant, star-shaped, creamy-white flowers in early summer, followed by narrowly oblong, purple fruits. Z7–10
F. velutina (Arizona ash) illus. p.74.

FREESIA

IRIDACEAE

Genus of winter- and spring-flowering corms, grown for their usually fragrant, funnel-shaped flowers, which are popular for cutting. Requires full sun and well-drained soil. Plant in fall and water throughout winter. Support with twigs or small canes. Dry off corms after flowering. Plant specially prepared corms outdoors in spring for flowering in summer. Propagate by offsets in fall or by seed in spring.
F. alba, syn. *F. refracta* var. *alba*. Late winter- and spring-flowering corm. H 8–12in (20–30cm), S 1½–2½in (4–6cm). Has narrowly sword-shaped, erect leaves in a basal fan. Leafless stems bear loose spikes of very fragrant, white flowers, sometimes with a yellow blotch on the lowest petal, each 2–3in (5–8cm) long. Z10–11
F. alba of gardens. See *F. leichtlinii* subsp. *alba*.
***F. armstrongii*.** See *F. corymbosa*.
F. caryophyllacea, syn. *F. xanthospila*. Late winter- and spring-flowering corm. H to 6in (15cm), S 1½–2½in (4–6cm). Has narrow, sword-shaped leaves growing at an angle. Short, leafless stems bear spikes of white, narrow, tubular flowers, 1¼–2in (3–5cm) long, with the lower 3 petals usually marked with yellow. Z11
F. corymbosa, syn. *F. armstrongii*. Late winter-and spring-flowering corm. H to 1ft (30cm), S 1½–2½in (4–6cm). Basal, erect leaves are narrowly sword-shaped. Flower stem bends horizontally near the top and bears a spike of upright, unscented, flowers, 1¼–1½in (3–3.5cm) long, creamy-white, pale yellow with bright yellow lower petals, or pale pink with yellow throats. Z10–11
***F.* 'Golden Melody'.** Winter- and spring-flowering corm. H to 1ft (30cm), S 1½–2½in (4–6cm). Similar to *F. corymbosa*, but has larger, fragrant, all yellow flowers. Z10–11
***F. lactea*.** See *F. leichtlinii* subsp. *alba*.
F. laxa, syn. *Anomatheca laxa*, *Lapeirousia cruenta*, *L. laxa*, illus. p.423.
F. leichtlinii* subsp. *alba, syn *F. alba* of gardens, *F. lactea*, *F. refracta* var. *alba*. Winter- and spring-flowering corm. H 8–16in (20–40cm). Produces narrow, upright leaves and very fragrant, white flowers, 1–2½in (2.5–6cm) long, sometimes flushed purple. Z8–11
***F.* 'Oberon'.** Winter- and spring-flowering corm. H to 16in (40cm), S 1½–2½in (4–6cm). Has narrow, erect, basal leaves and yellow flowers, 1½–2in (4–5cm) long, light blood-red inside; the throats are lemon-yellow with small, red veins. Z10–11
***F. refracta* var. *alba*.** See *F. leichtlinii* subsp. *alba*.
***F.* 'Romany'.** Winter- and spring-flowering corm. H to 1ft (30cm), S 1½–2½in (4–6cm). Similar to *F. corymbosa*, but has fragrant, double, pale mauve flowers. Z10–11
***F.* 'White Swan'.** Winter- and spring-flowering corm. H to 1ft (30cm), S 1½–2½in (4–6cm). Similar to *F. corymbosa*, but has very fragrant, white flowers with cream throats. Z10–11
***F. xanthospila*.** See *F. caryophyllacea*.

***Fremontia*.** See *Fremontodendron*.

FREMONTODENDRON

SYN. FREMONTIA

Flannel bush

MALVACEAE

Genus of vigorous, evergreen or semievergreen shrubs or trees, grown for their large, very showy flowers. May withstand occasional temperatures of 5°F (–15°C) if planted against a warm, sunny wall. Needs full sun and light, not too rich, well-drained soil. In mild areas may be grown as a spreading shrub, but needs firm staking when young. Resents being transplanted. Propagate by semiripe cuttings in summer or by seed in fall or spring. ① Contact with the foliage and shoots may irritate the skin.
***F.* 'California Glory'** illus. p.206.
***F. californicum*.** Vigorous, evergreen or semievergreen, upright shrub. H 20ft (6m), S 12ft (4m), when grown against a wall. Large, saucer-shaped, bright yellow flowers are borne amid dark green leaves, each with 3, 5, or 7 rounded lobes, from late spring to midfall. Z8–10
***F.* 'Pacific Sunset'.** Upright, evergreen shrub. H 15ft (5m), S 10–12ft (3–4m). Rounded, strongly lobed leaves are dark green. In summer, bears saucer-shaped, bright yellow flowers, to 2½in (6cm) across, with long, slender-pointed lobes. Z9–10
***F.* 'Tequila Sunrise'.** Upright, evergreen shrub. H 20ft (6m), S 12ft (4m). Slightly less vigorous than *F.* 'Pacific Sunrise', with marginally smaller flowers. These are borne from late spring to fall and are rich orange-yellow, with darker centers. Z9–10

FRITILLARIA

LILIACEAE

Genus of spring-flowering bulbs, grown for their pendent, mainly bell-shaped flowers on leafy stems. Depending on the species, requires full sun or partial shade, and well-drained soil that dries out slightly

in summer when bulbs are dormant but that does not become sunbaked, or moist, rich soil. Grow *F. meleagris*, which is good for naturalizing in grass, in moisture-retentive soil. Propagate by offsets in summer or by seed in fall or winter.

F. acmopetala illus. p.406.

***F. bucharica*.** Spring-flowering bulb. H 4–14in (10–35cm), S 2in (5cm). Stems each bear spreading, lance-shaped to ovate, gray-green leaves and a raceme of up to 10 cup-shaped, green-tinted, white flowers, ⅝–¾in (1.5–2cm) long. Z8–10

F. camschatcensis (Black sarana) illus. p.403.

F. cirrhosa illus. p.406.

***F. crassifolia*.** Spring-flowering bulb. H 4–8in (10–20cm), S 2in (5cm). Has spreading, lance-shaped, gray-green leaves. Stems each bear 1–3 bell-shaped, green flowers, ¾–1in (2–2.5cm) long, and checkered brown. Z6–8

***F. delphinensis*.** See *F. tubiformis*.

F. imperialis (Crown imperial) illus. p.383. **'Lutea'** illus. p.382. **'Maxima Lutea'** is a robust, spring-flowering bulb. H to 5ft (1.5m), S 9–12in (23–30cm). Leafy stems bear whorls of light green leaves. Bears umbels of 3–6 widely bell-shaped, brilliant yellow flowers, to 2½in (6cm) long, crowned by small, leaflike bracts. **'Rubra Maxima'** has deep red flowers. Z4–8

F. meleagris (Snake's-head fritillary) illus. p.402.

***F. michailovskyi*.** Spring-flowering bulb. H 4–8in (10–20cm), S 2in (5cm). Lance-shaped, mid-green leaves are scattered on the stems. Produces 1–4 bell-shaped flowers, ¾–1¼in (2–3cm) long, colored purplish-brown with the upper third of petals bright yellow. Z5–8

F. pallidiflora illus. p.406.

F. persica illus. p.382. **'Adiyaman'** is a spring-flowering bulb. H to 5ft (1.5m), S 4in (10cm). Narrowly lance-shaped, gray-green leaves are produced along the stem. Bears a spike of 10–20 or more narrowly bell-shaped, deep blackish-purple flowers, ⅝–¾in (1.5–2cm) long. **'Ivory Bells'** illus. p.382. Z6–8

F. pontica illus. p.406.

F. pudica (Yellow fritillary) illus. p.422.

F. pyrenaica illus. p.403.

F. raddeana illus. p.382.

F. recurva (Scarlet fritillary) illus. p.383.

F. sewerzowii, syn. *Korolkowia sewerzowii*. Spring-flowering bulb. H 6–10in (15–25cm), S 3–4in (8–10cm). Stems bear scattered, broadly lance-shaped, gray-green leaves. Produces a spike of up to 12 narrowly bell-shaped, green or metallic purplish-blue flowers, 1–1½in (2.5–3.5cm) long, with flared mouths. Z6–8

F. tubiformis, syn. *F. delphinensis*. Spring-flowering bulb. H 6–14in (15–35cm), S 2–3in (5–8cm). Stems bear scattered, narrowly lance-shaped, glaucous, gray-green leaves and a solitary, broadly bell-shaped, grayish-purple flower, 1½–2in (3.5–5cm) long, white within and conspicuously checkered purplish-brown. Z7–9

F. verticillata illus. p.382.

FUCHSIA

ONAGRACEAE

Genus of deciduous or evergreen shrubs and trees, and a few perennials, grown for their flowers, usually borne from early summer to early fall. If temperatures remain above 39°F (4°C), deciduous plants are evergreen, but temperatures above 90°F (32°C) should be avoided. Prolonged low temperatures cause loss of top growth. If top growth dies in winter, cut back to ground level in spring. Needs a sheltered, partially shaded position, except where stated otherwise, and fertile, moist but well-drained soil. When grown as potted plants in a greenhouse, fuchsias need high-nitrogen feeds and, when in flower, plenty of potash. Propagate by softwood cuttings in any season.

Tubular flowers are almost always pendulous and often bicolored, with petals of one hue, and a tube and 4 sepals of another. Flowers are described below as "small" ¾–1½in (2–4cm) across, "medium" 1½–2½in (4–6cm), or "large" 2½in (6cm) or more across. Leaves are ovate and mid-green unless otherwise stated. Spherical to cylindrical, usually blackish-purple fruits are edible, but mostly poor-flavoured. Upright types may be trained as compact bushes or standards or, with more difficulty, as pyramids. Lax or trailing plants are good for hanging baskets, but may be trained on trellises; if they are used for summer bedding they require staking. Heights given in descriptions below are of plants grown in frost-free conditions. See also feature panels, p.154 (hardy fuchsias) and p.302 (tender fuchsias).

***F.* 'Alice Hoffman'.** Deciduous, compact shrub. H and S 2½ft (75cm). Has bronze foliage and small, semidouble flowers with rose-red tubes and sepals and rose-veined, white petals. Z9–11

***F.* 'Annabel'** (illus. p.302). Deciduous, upright shrub. H 3ft (1m), S 2½ft (75cm). Produces large, double, pink-tinged, creamy-white flowers amid pale green leaves. Excellent grown as a standard. Z9–11

***F.* 'Applause'.** Deciduous, lax, upright shrub. H 12–18in (30–40cm), S 18–24in (45–60cm). Very large, double flowers have short, thick, pale carmine tubes, very broad, carmine sepals with a pale central streak, and many, spreading, deep orange-red petals. Has best color in shade. Needs staking as a bush; will trail with weights. Z9–11

***F. arborea*.** See *F. arborescens*.

F. arborescens, syn. *F. arborea* (Tree fuchsia). Evergreen, upright shrub or small tree. H 25ft (8m), S 8ft (2.5m). Foliage is mid- to dark green. Erect heads of tiny, pale mauve to pink flowers, borne year-round, are followed by black fruits with gray-blue bloom. May also be grown as a potted plant. Z9–11 (min. 41°F/5°C)

***F.* 'Auntie Jinks'.** Deciduous, trailing shrub. H 6–8in (15–20cm), S 8–16in (20–40cm). Bears small, single flowers with pink-red tubes, cerise-margined white sepals, and white-shaded purple petals. Z9–11

***F.* 'Autumnale'**, syn. *F.* 'Burning Bush'. Deciduous, prostrate shrub, grown mainly for its foliage. H 6–12in (15–30cm), S 20in (50cm). Bears variegated red, gold and bronze leaves. Medium flowers have red tubes and sepals with reddish-purple petals. Suitable for a hanging basket or for training as a weeping standard. Z9–11

***F.* x *bacillaris*.** Group of deciduous, erect or spreading shrubs. H and S 2½ft (75cm). Small leaves are mid- to dark green. Bears minute, pink or crimson flowers (color varying according to sun), and sometimes glossy, purplish-brown fruits. Good for a rock garden or hanging basket. Z9–11

***F.* 'Ballet Girl'.** Deciduous, upright shrub. H 12–18in (30–45cm), S 18–30in (45–75cm). Bears large, double flowers with bright cerise tubes and sepals, and white petals with cerise veins at the base. Z9–11

***F.* 'Bicentennial'** (illus. p.302). Deciduous, lax shrub. H 12–18in (30–45cm), S 18–24in (45–60cm). Bears medium double flowers with thin white tubes, orange sepals, and double corollas with magenta centers surrounded by orange petals. Z9–11

F. boliviana*.** Fast-growing, deciduous, upright shrub or small tree. H 10ft (3m), S 3ft (1m). Has large, soft, gray-green leaves with reddish midribs. Long-tubed, scarlet flowers, bunched at ends of branches, are followed by pleasantly flavoured, black fruits. Needs a large pot and plenty of space to grow well. Resents being pinched back. Very susceptible to whitefly. Z13–15. (min. 41°F/5°C) **var. *alba (syn. *F.b.* var. *luxurians* 'Alba', *F. corymbiflora* 'Alba') has flowers with white tubes and sepals and scarlet petals, followed by green fruits.

var. *luxurians* 'Alba' see *F.b.* var. *alba*.

***F.* 'Bon Accorde'.** Vigorous, deciduous, upright shrub. H 5ft (1.5m), S 20in (50cm). Small, erect flowers have white tubes and sepals and pale purple petals. Z9–11

***F.* 'Brookwood Belle'.** Deciduous, lax, bushy shrub with strong, short-jointed stems. H and S 18–24in (45–60cm). Medium, double flowers have deep cerise tubes and sepals, and white petals flushed pink and veined deep rose-pink. Z9–11

***F.* 'Brutus'.** Vigorous, deciduous, upright, free-flowering shrub. H 5ft (1.5m), S 3ft (1m). Medium, single flowers have crimson-red tubes and sepals and deep purple petals. Z9–11

***F.* 'Burning Bush'.** See *F.* 'Autumnale'.

***F.* California Dreamer Series**

Deciduous, semitrailing shrubs. H and S 18in (45cm). Bear large, blowsy, fully double flowers. Ideal for a large container. Z9–11. **'Bella Rosella'** is strong-growing and trailing. H 6–10in (15–25cm), S 20–23in (50–60cm). Bears large, double flowers with pale pink sepals, and ruffled, darker pink petals. Excellent in a hanging basket.

***F.* 'Cascade'.** Deciduous, trailing shrub. H 6ft (2m), S indefinite. Bears medium, single flowers with red-tinged, white tubes and sepals and deep carmine-red petals. Excellent for a hanging basket. Z9–11

***F.* 'Celia Smedley'** (illus. p.302). Vigorous, deciduous, upright shrub. H 5ft (1.5m), S 3ft (1m). Large, single or semi-double flowers have greenish-white tubes, pale pinkish-white sepals and currant-red petals. Best trained as a standard. Z9–11

***F.* 'Checkerboard'.** Vigorous, deciduous, upright shrub with strong stems. H 30–36in (75–90cm), S 18–30in (45–75cm). Produces medium, single flowers with slightly curved-back, long red tubes, red sepals turning white and white-based, dark red petals. Z9–11

***F.* 'Cloverdale Pearl'.** Deciduous, upright shrub. H 3ft (1m), S 2½ft (75cm). Foliage is mid-green with crimson midribs. Flowers have pinkish-white tubes, pink-veined, white petals and green-tipped, pink sepals. Readily trained as a standard. Z9–11

***F.* 'Coquet Bell'.** Vigorous, deciduous, upright shrub. H 5ft (1.5m), S 3ft (1m). Bears a profusion of single or semidouble flowers with pinkish-red tubes and sepals and red-veined, pale mauve petals. Z9–11

***F.* 'Coralle'**, syn. *F.* 'Koralle' (illus. p.302). Deciduous, upright shrub. H and S 3ft (1m). Foliage is velvety, deep green. Very small, salmon-orange flowers, with long, narrow tubes and small sepals and petals, are bunched at branch ends. Useful for summer bedding and as a specimen plant. Prefers sun. Z9–11 (min. 41°F/5°C)

***F.* 'Corallina'** (illus. p.154). Deciduous, spreading shrub. H 16in (40cm), S 60in (1.5m). Has burgundy-red stems and mid-green leaves flushed bronze at the bases. Pendent, medium flowers have narrow, scarlet tubes and spreading sepals and broader, shorter, purple petals tinted red at the bases. Z9–11

***F. corymbiflora* 'Alba'.** See *F. boliviana* var. *alba*.

***F.* 'Dancing Flame'.** Deciduous, lax shrub. H and S 18in (45cm). Strong stems bear small, ovate, deep green leaves. Medium, double flowers have orange to pink tubes; the light orange, curving sepals and orange-carmine petals are darker on under- or outersides. Z9–11

***F.* 'Dark Eyes'.** Deciduous, bushy, upright shrub. H 18–24in (45–60cm), S 24–30in (60–75cm). Bears medium, double flowers that hold their shape for a long time. The tubes and upturned sepals are deep red, and petals deep violet-blue. Z9–11

***F. denticulata*.** Deciduous, erect to scandent shrub. H 12ft (4m), S indefinite. Leaves are glossy, dark green above and reddish-green beneath. Small, single flowers have long, crimson, pink or lavender tubes, green-tipped, pale pink sepals and orange to vermilion petals. Under glass, flowering continues from summer into fall and winter. Z9–11

***F.* 'Display'.** Deciduous, upright shrub. H 3ft (1m), S 2½ft (75cm). Bears medium, single, saucer-shaped flowers with carmine-red sepals and pink petals. Z9–11

***F.* 'Dollar Princess'.** See *F.* 'Dollar Prinzessin'.

***F.* 'Dollar Prinzessin'**, syn. *F.* 'Dollar Princess' (illus. p.302). Deciduous, upright shrub. H 3ft (1m), S 2½ft (75cm). Small, double flowers have cerise-red tubes and sepals and rich purple petals. Z9–11

***F.* 'Estelle Marie'.** Deciduous, upright shrub. H 3ft (1m), S 20in (50cm). Small, single flowers have white tubes, green-tipped, white sepals and mauve petals. Excellent for summer bedding. Z9–11

***F.* 'Flash'.** Fast-growing, deciduous, stiffly erect shrub. H 8ft (2.5m), S 20in (50cm). Produces small, single, red flowers amid small leaves. Z9–11

***F.* 'Flirtation Waltz'.** Vigorous, deciduous, upright shrub. H 3ft (1m), S 2½ft (75cm). Produces large, double flowers with petals in shades of pink, and white tubes and sepals. Z9–11

F. fulgens (illus. p.302). Deciduous, upright shrub with tubers. H 6ft (2m),

S 3ft (1m). Very small, single, pink- to red-tubed flowers, with pale red, green-tinged sepals and vivid red petals, hang in short clusters amid large, pale green leaves and are followed by edible but acidic, deep purple fruits. Tubers may be stored dry for winter or propagated by division in spring. Highly susceptible to whitefly. Z10–11

***F.* 'Garden News'.** Deciduous, upright shrub with strong stems. H and S 18–24in (45–60cm). Medium, double flowers have short, thick, pink tubes, frost-pink sepals and magenta-rose petals that become rose-pink at the base. Z9–11

***F.* 'Genii'.** Deciduous, erect shrub. H 5ft (1.5m), S 2½ft (75cm). Golden-green foliage. Produces small, single flowers with cerise-red tubes and sepals, reddish-purple petals. Good trained as a standard. Z9–11

***F.* 'Golden Dawn'.** Deciduous, upright shrub. H 5ft (1.5m), S 2½ft (75cm). Single, medium flowers are salmon-pink. Good as a standard. Z9–11

***F.* 'Golden Marinka'** (illus. p.302). Deciduous, trailing shrub. H 6ft (2m), S indefinite. Has medium, single red flowers and variegated golden-yellow leaves with red veins. Good for a hanging basket. Z9–11

***F.* 'Gruss aus dem Bodethal'.** Deciduous, upright shrub. H 3ft (1m), S 2½ft (75cm). Small, semidouble or single, crimson flowers open almost black, becoming larger and paler with age. Z9–11

***F.* 'Harry Gray'.** Deciduous, lax shrub. H 6ft (2m), S indefinite. Bears a profusion of double flowers with pale pink tubes, green-tipped, white sepals and white to pale pink petals. Excellent in a hanging basket. Z9–11

***F.* 'Heidi Weiss'**, syn. *F.* 'White Ann' of gardens, *F.* 'White Heidi Ann' of gardens. Deciduous, upright shrub. H 3ft (1m), S 2½ft (75cm). Has double flowers with red tubes and sepals and cerise-veined, white petals. Good for training as a standard. Z9–11

***F.* 'Howlett's Hardy'** (illus. p.154). Deciduous, mound-forming shrub. H 16in (40cm). S 2ft (60cm). Dark red-purple stems bear slightly bronzed, mid-green leaves. Throughout summer produces numerous, pendent, medium flowers with spreading to reflexed, scarlet sepals and bright purple petals veined red at the bases. Z9–11

***F.* 'Hula Girl'.** Deciduous, trailing shrub. H 6ft (2m), S indefinite. Bears large, double flowers with deep rose-pink tubes and sepals and pink-flushed, white petals. Grow in a large hanging basket or train against a trellis. Z9–11

***F.* 'Jack Shahan'** (illus. p.302). Vigorous, deciduous, trailing shrub. H 6ft (2m), S indefinite. Produces large, single pale to deep pink flowers. Excellent for a hanging basket, for training into a weeping standard, or upright against a trellis. Z9–11

***F.* 'Joanna Lumley'** (illus. p.302). Deciduous, semitrailing shrub. H and S 12–15in (30–38cm). Bears large, double flowers with rather upright, blushed white sepals and lilac petals stained pink at the bases. Z9–11

***F.* 'John Ridding'**, syn. *F. triphylla* 'Firecracker' (illus. p.302). Deciduous, upright shrub. H 2½ft (75cm), S 18in (45cm). Has pink-veined, olive-green leaves, with cream margins, and produces small, long-tubed, bright orange-pink flowers. Z10–11 (min. 41°F/5°C)

***F.* 'Joy Patmore'.** Vigorous, deciduous, upright shrub. H 5ft (1.5m), S 3ft (1m). Medium, single flowers have white tubes, green-tipped, white sepals and cerise petals with white bases. Good as a standard. Z9–11

***F.* 'Koralle'.** See *F.* 'Coralle'.

***F.* 'La Campanella'.** Deciduous, trailing shrub. H 5ft (1.5m), S indefinite. Has small, semidouble flowers with white tubes, pink-flushed, white sepals and cerise-purple petals. Best in a hanging basket or against a trellis. Z9–11

***F.* 'Lady Thumb'** illus. p.152.

***F.* 'Lena'.** Deciduous, lax shrub. H and S 3ft (1m). Bears medium, single to semidouble flowers with pale pink sepals and tubes and pink-flushed, purple petals. Good as a standard. Z9–11

***F.* 'Leonora'** illus. p.301.

***F.* 'Love's Reward'.** Deciduous, upright, short-jointed shrub. H and S 12–18in (30–45cm). Small to medium, single flowers have white to pale pink tubes and sepals and violet-blue petals. Z9–11

***F.* 'Lye's Unique'**. Vigorous, deciduous, upright shrub. H 5ft (1.5m), S 3ft (1m). Has medium, single flowers with long, white tubes and sepals and orange-red petals. Good for training as a large pyramid. Z9–11

***F.* 'Madame Cornélissen'** (illus. p.154). Deciduous, arching shrub. H and S to 3ft (1m). Bears single flowers with long, mauve-red tubes and sepals and white petals. Z9–11

F. magellanica (illus. p.154). Deciduous, upright shrub. H 10ft (3m), S 6ft (2m). Small, single flowers with red tubes, long, red sepals and purple petals are followed by red-purple fruits. Z6–9. **'Alba'** see *F.m.* var. *molinae*. **var. *gracilis*** (illus. p.154) is compact and mound-forming, with rich red stems. H 32in (80cm), S 4ft (1.2m). Bears pendent, medium flowers with narrow, slightly spreading, scarlet sepals and shorter, deep purple petals. **var. *gracilis* 'Aurea'** is vigorous, with golden yellow leaves (illus. p.302). **var. *molinae*** (syn. *F.m.* 'Alba') has very pale pink flowers. **var. *molinae* 'Enstone'** has gold and green, variegated foliage. **var. *molinae* 'Sharpitor'** produces cream and pale green, variegated leaves. **'Thompsonii'** (illus. p.154), H 5ft (1.5m), S 3ft (1m), has bright red tubes and sepals and purple petals, red-tinted at the bases.

***F.* 'Margaret Brown'.** Deciduous, free-flowering, upright shrub. H and S 2–3ft (60–90cm). Has strong stems and light green foliage, and bears small, single flowers in 2 shades of pink in summer. Z9–11

***F.* 'Marinka'.** Deciduous, trailing shrub. H 6ft (2m), S indefinite. Medium, single, red flowers with darker petals that are folded at outer edges are borne amid dark green leaves with crimson midribs. Foliage becomes discolored in full sun or cold winds. Good in a hanging basket. Z9–11

***F.* 'Micky Goult'.** Vigorous, deciduous, upright shrub. H 3ft (1m), S 2½ft (75cm). Small flowers, with white tubes, pink-tinged, white sepals and pale purple petals, are produced amid pale green foliage. Z9–11

***F.* 'Mieke Meursing'.** Deciduous, upright shrub. H 3ft (1m), S 2½ft (75cm). Medium, single to semidouble flowers have red tubes and sepals and pale pink petals with cerise veins. Z9–11

***F.* 'Mrs. Lovell Swisher'** (illus. p.302). Deciduous, upright shrub. H 18–24in (45–60cm), S 12–24in (30–60cm). Bears a profusion of small, single flowers with flesh-pink tubes, pinkish-white sepals and deep rose-pink petals. Z9–11

***F.* 'Mrs. Popple'** (illus. p.154). Vigorous, deciduous, upright shrub. H 5ft (1.5m), S 2½ft (75cm). Medium, single flowers with red tubes, overhanging, red sepals and purple petals. In a sheltered area may be grown as a hedge. Z9–11

***F.* 'Mrs. W. Rundle'.** Vigorous, deciduous, lax shrub. H and S 2½ft (75cm). Produces large, single flowers with long, pink tubes, green-tipped, pink sepals and vermilion petals. Good trained as a standard or in a large hanging basket. Z9–11

***F.* 'Nancy Lou'.** Vigorous, deciduous, upright shrub. H and S 3ft (1m). Large, double flowers have pink tubes, upright, green-tipped, pink sepals and bright white petals. Z9–11

***F.* 'Nellie Nuttall'** (illus. p.302). Vigorous, deciduous, upright shrub. H 3ft (1m), S 2½ft (75cm). Freely bears small, single, upward-facing flowers, with rose-red tubes and sepals and white petals. Excellent for summer bedding and as a standard. Z9–11

***F.* 'Other Fellow'.** Deciduous, upright shrub. H 5ft (1.5m), S 2½ft (75cm). Small, single flowers have white tubes and sepals and pink petals, white at the bases. Z9–11

***F.* 'Pacquesa'.** Vigorous, deciduous, upright shrub. H 3ft (1m), S 2½ft (75cm). Large, single flowers have deep red tubes and sepals and red-veined, white petals. Good for training as a standard. Z9–11

***F.* 'Peppermint Stick'.** Deciduous, upright shrub. H and S 3ft (1m). Large, double, carmine-red flowers have a central, white stripe and royal purple sepals. Z9–11

***F.* 'Phyllis'.** Deciduous, upright shrub. H 6ft (2m), S 3ft (1m). Small to medium, semidouble flowers, with rose-red tubes and sepals and crimson petals, are followed by abundant, black fruits. In a sheltered area, may be grown as a hedge. Z9–11

***F.* 'Pink Fantasia'.** Deciduous, stiff, upright shrub. H 12–18in (30–40cm), S 18–24in (45–60cm). Bears medium, single, upward-looking flowers, in profusion, with white tubes and sepals blushed dark pink, and dark purple petals, veined pink, with white bases. Good for borders or pots. Z9–11

***F.* 'Pink Galore'** (illus. p.302). Deciduous, trailing shrub. H 5ft (1.5m), S indefinite. Has large, double, pale pink flowers. Grows best in a large hanging basket or when trained against a trellis. Z9–11

F. procumbens (Trailing fuchsia). Deciduous, prostrate shrub. H 4in (10cm), S indefinite. Produces tiny, erect, petalless, yellow- to orange-tubed flowers with purple sepals and bright blue pollen. Has small, dark green leaves and large, red fruits. Suits a rock garden and a hanging basket. Encourage flowering by root restriction or grow in poor, sandy soil. Z9–11

***F.* 'Red Spider'** (illus. p.302). Deciduous, trailing shrub. H 5ft (1.5m), S indefinite. Bears medium, single, red flowers with long, narrow, spreading sepals and darker petals. Best in a large hanging basket or when trained against a trellis. Z9–11

***F.* 'Riccartonii'** (illus. p.154). Deciduous, stiff, upright shrub. H 6ft (2m), S 5ft (1.5m). Has dark green leaves with a slight bronze sheen. Small, single flowers have red tubes and red sepals and purple petals. Good as a hedge in sheltered, frost-free areas. Z9–11

***F.* 'Rose Fantasia'.** Deciduous, stiff, upright shrub. H 12–18in (30–40cm), S 18–24in (45–60cm). Bears medium, single, upward-looking flowers, in profusion, with rose-pink tubes, dark rose-pink sepals with green tips and red-purple petals, veined rose-pink. Good for borders or pots. Z9–11

***F.* 'Rose of Castile'.** Vigorous, deciduous, upright shrub. H 5ft (1.5m), S 3ft (1m). Produces small, single flowers with white tubes, green-tipped, white sepals and purple-flushed, pink petals. Good as a standard. Z9–11

***F.* 'Rough Silk'.** Vigorous, deciduous, trailing shrub. H 6ft (2m), S indefinite. Bears large, single flowers with pink tubes, long, spreading, pink sepals and wine-red petals. Grows best in a large hanging basket or when trained against a trellis. Z9–11

***F.* 'Royal Velvet'.** Vigorous, deciduous, upright shrub. H 5ft (1.5m), S 2½ft (75cm). Bears large, double flowers with red tubes and sepals and deep purple petals, splashed deep pink. Excellent as a standard. Z9–11

***F.* 'Rufus'** (illus. p.154). Vigorous, deciduous, upright shrub. H 5ft (1.5m), S 2½ft (75cm). Has a profusion of medium, single, bright red flowers. Easily trained as a standard. Z9–11

***F.* 'Shelford'.** Deciduous, upright, short-jointed shrub. H 14–20in (35–50cm), S 18–24in (45–60cm). Bears abundant, medium, single flowers with slightly fluted, baby-pink tubes, long, narrow, baby-pink sepals and white petals with slight pink veining at the bases. Suitable for training. Z9–11

***F. splendens*.** Deciduous, upright shrub. H 6ft (2m), S 3ft (1m). Small, single flowers, with broad, orange tubes, pinched in their middles, and short, green sepals and petals, are borne in spring amid pale green foliage. Susceptible to whitefly. Z9–11

***F.* 'Strawberry Delight'.** Deciduous, lax shrub. H and S 3ft (1m). Yellowish-green leaves are slightly bronzed. Produces large, double flowers with red tubes and sepals and pink-flushed, white petals. Excellent as a standard or hanging basket plant. Z9–11

***F.* 'Sunray'** (illus. p.302). Deciduous, upright shrub. H and S to 28in (70cm). White-edged, light green leaves are sometimes pink flushed. Medium, single, red-violet flowers, with deep pink sepals, are borne freely in summer–fall. Z9–11

***F.* 'Swingtime'** (illus. p.302). Vigorous, deciduous, lax shrub. H and S 3ft (1m). Has large, double flowers with red tubes and sepals and red-veined, creamy-white petals. Good as a standard or hanging basket plant. Z9–11

***F.* 'Texas Longhorn'.** Deciduous, lax shrub. H and S 2½ft (75cm). Very large, double flowers have red tubes, long, spreading, red sepals and cerise-veined, white petals. Grow as a standard or in a hanging basket. Z9–11

***F.* 'Thalia'** (illus. p.302). Deciduous, upright shrub. H and S 3ft (1m). Foliage is dark maroon and velvety. Very small flowers, with long, red tubes, small, red sepals and small, orange-red petals, are bunched at ends of branches. Excellent for summer bedding schemes. Prefers a position in full sun. Z9–11 (in. 41°F/5°C)

***F. thymifolia*.** Deciduous, lax shrub. H and S 3ft (1m). Has pale green foliage and a few minute, greenish-white flowers that age to purplish-pink. Bears black

fruits on female plants if pollen-bearing plants of this species or of *F.* x *bacillaris* are also grown. Z9–11

***F.* 'Tom Thumb'** (illus. p.154). Deciduous, upright shrub. H and S 20in (50cm). Bears small, single flowers with red tubes and sepals and mauve-purple petals. May be trained as a miniature standard. Z9–11

***F.* 'Tom West'.** Deciduous, upright, lax shrub. H and S 12–24in (30–60cm). Has green and cream variegated foliage and small, single flowers with red tubes and sepals, and purple petals. Z9–11

***F. triphylla*.** Deciduous, upright shrub, sometimes confused with F. 'Thalia'. H and S 20in (50cm). Spikes of narrow, long-tubed, bright reddish-orange flowers, with small petals and sepals, are borne above dark bronze-green leaves that are purple beneath. Very difficult to grow. Z9–11.

'Firecracker' see *F.* 'John Ridding'.

***F.* 'Waveney Gem'.** Deciduous, trailing shrub. H and S 12–18in (30–45cm). Bears small to medium, single white and mauve-pink flowers from early summer. Z9–11

***F.* 'White Ann'** of gardens. See *F.* 'Heidi Weiss'.

***F.* 'White Heidi Ann'** of gardens. See *F.* 'Heidi Weiss'.

***F.* 'Whiteknights Pearl'.** Deciduous, upright shrub. H and S 3ft (1m) or more. In summer-fall, freely produces small, single flowers with long, thin, white tubes, pale pink sepals with small green tips, and clear pink corollas with rounded petals. Z9–11

***F.* 'Winston Churchill'.** Deciduous, bushy, upright, extremely free-flowering shrub. H and S 18–30in (45–75cm). Has medium, fully double flowers with green-tipped pink tubes, broad, reflexed sepals, and lavender-blue corollas that age to purple. Good for summer bedding, or trained as a standard in containers. Z9–11

FURCRAEA

ASPARAGACEAE/AGAVACEAE

Genus of perennial succulents with dense clusters of sword-shaped, fleshy, toothed leaves in terminal or basal rosettes; rosettes die after flowering. Resembles *Agave*, but has short-tubed flowers. Requires a position in full sun and in well-drained soil. Protect from winter wet. Propagate by bulbils, borne on lower stems, when developed.

***F. bedinghausii*.** See *F. parmentieri*.

F. foetida, syn. *F. gigantea*. Basal-rosetted, perennial succulent. H 10ft (3m), S 15ft (5m). Has broadly sword-shaped, fleshy, mid-green leaves, to 8ft (2.5m) long, with edges toothed only at the base. Flower stems, to 25ft (8m), produce scented, bell-shaped, green flowers, white within, in summer. Z10–15. (min. 45°F/7°C)

'Mediopicta' (syn. *F.f.* var. *mediopicta, F.f.* 'Variegata') illus. p.481.

***F. gigantea*.** See *F. foetida*.

F. longaeva of gardens. See *F. parmentieri*.

F. parmentieri, syn. *F. bedinghausii, F. longaeva* of gardens. Rosette-forming, perennial succulent. H 6–25ft (2–8m), S 3–10ft (1–3m). Sword-shaped, minutely toothed leaves are glaucous, mid-green. In summer, bears a large, pyramidal, erect spike, to 15ft (5m), with drooping branches and clusters of 2–4 greenish-white flowers, 1¼–1½in (3–4cm), followed by numerous bulbils. Z10–12

G

GAGEA

LILIACEAE

Genus of spring-flowering bulbs, grown for their clusters of funnel- or star-shaped, white or yellow flowers. Suitable for rock gardens. Prefers full light and well-drained soil that does not become too hot and dry. Dies down in summer. Propagate by division in spring or fall or by seed in fall.

G. graeca, syn. *Lloydia graeca*. Spring-flowering bulb. H 2–4in (5–10cm), S 1¼–2in (3–5cm). Threadlike, semierect leaves form at ground level and on wiry stems. Bears up to 5 widely funnel-shaped, purple-veined, white flowers, ½–¾in (1–1.5cm) long. Z7–9

***G. pedunculariis*.** Spring-flowering bulb.H 2–6in (5–15cm), S 1–2in (2.5–5cm). Has threadlike, semierect leaves at base and on stem. Bears a loose head of flat, star-shaped, yellow flowers, each ⅝–1¼in (1.5–3cm) across, green striped outside. Z6–9

GAILLARDIA

Blanket flower

ASTERACEAE/COMPOSITAE

Genus of summer-flowering annuals, biennials and perennials that tend to be short-lived. Requires sun and prefers well-drained soil. May need staking. Propagate species by seed in fall or spring, selected forms by root cuttings in winter.

***G.* x *grandiflora*.** Bushy, often short-lived perennial. H to 3ft (90cm), S 18in (45cm). Has sword-shaped, gray- to mid-green leaves. Bears large, daisylike, yellow flowers with red bases and yellow-brown centers. Z6–10. **Arizona Series** illus. p.327. **'Dazzler'** is an upright, rather open perennial. H 2ft (60cm), S 20in (50cm). Yellow-tipped, bright orange-red flower heads, with maroon centers, are borne for a long period in summer. Leaves are soft and divided. **'Kobold'** bears yellow-tipped, rich red flower heads with red centers. **Mesa Series** illus. p.319. **'Oranges and Lemons'** illus. p.277.

GALANTHUS

Snowdrop

AMARYLLIDACEAE

Genus of bulbs, grown for their pendent, white flowers, one on each slender stem between 2 basal leaves. Easily recognized by its 3 large, outer petals and 3 small, inner ones forming a cup, which is green-marked. Needs a cool, partially shaded position and humus-rich, moist soil. Do not allow bulbs to dry out excessively. Propagate by division in spring after flowering, or in late summer or fall when bulbs are dormant. ⓘ All parts may cause mild stomach upset if ingested; contact with the bulbs may irritate skin.

G. alpinus. Late winter- and early spring-flowering bulb. H 6in (15cm). Leaves are broadly strap-shaped, matte to slightly shiny, and gray-green. Flowers, to 1in (25cm) long, have inner petals marked green at the tips. Z3–9

***G.* 'Arnott's Seedling'**. See *G.* 'S. Arnott'.

***G.* 'Atkinsii'** illus. p.427.

***G.* 'Bertram Anderson'.** Robust, late winter-flowering bulb. H 6in (15cm). Has erect, flat to pleated, blue-green leaves. Produces a stalk, rarely 2, with large, rounded flowers, to 1¼in (3cm) long. Each inner petal is tipped with a broad, inverted, deep green mark. Z6–10

***G.* 'Bill Bishop'.** Robust, late winter-flowering bulb. H 6in (15cm). Produces semierect, gray-green leaves. Large, rounded flowers, to 1½in (4cm) long, have inner petals each with a broad, V-shaped, deep green mark at the tip. Z6–10

***G. corcyrensis*.** See *G. reginae-olgae*.

***G.* 'Cowhouse Green'.** Late winter-flowering bulb. H 6in (16cm). Gray-green leaves are sometimes slightly pleated at the edges. Bears rounded flowers, to 1in (25cm) long, with outer petals smudged and lined pale green at the tips, and inner petals with upside-down, V-shaped marks. Z6–10

G. elwesii illus. p.427. **'Godfrey Owen'** is a late winter- and early spring-flowering bulb. H 4–12in (10–30cm), S 2–3in (5–8cm). Semierect, basal, gray-green leaves widen gradually toward tips. Bears flowers, to 6in (16cm) long, unusually with 6 petals, occasionally more, of the same size; each inner petal has 2 small, green dots at the tip, sometimes smaller green marks near the base. **'Rosemary Burnham'**, H 5in (13cm), has short leaves. Bears greenish-white flowers; inner petals are green with narrow, white margins and the outer petals are veined pale green. Z3–9

***G.* 'Emma Mackenzie'.** Vigorous bulb with rolled, gray-green leaves. H 6in (15cm). Often produces 2 or 3 flower stalks. Large flowers have pointed, wavy-edged outer petals and dark green inner petals with frilled, white margins. Z6–10

***G. fosteri*.** Slender, late winter-flowering bulb. H 5½in (14cm). Has lance-to strap-shaped, deep green leaves. Bears flowers, ⅝–1in (1.5–2.5cm) long; inner petals are marked green at the tips and bases. Needs a sheltered site. Plant 4in (10cm) deep to avoid non-flowering offsets. Z6–10

G. gracilis, syn. G. *graecus* of gardens, illus. p.427.

G. graecus of gardens. See *G. gracilis*.

***G.* 'Hill Poë'** illus. p.427.

G. ikariae, syn. *G. latifolius* of gardens, illus. p.427.

***G.* 'John Gray'.** Robust, early winter-flowering bulb. H 6in (15cm). Has erect, narrow, gray-green leaves. Arching stalks bear large flowers, 1¼–1½in (3–4cm) long; each inner petal has an X-shaped, green mark. Z6–10

***G.* 'Ketton'.** Robust, late winter-flowering bulb. H 7in (18cm). Has narrow to very narrow, pleated, gray-green leaves. Bears large flowers, 1¼–1½in (3–4cm), with pairs of small, green blotches, sometimes joined, at the inner petal tips. Z6–10

G. latifolius of gardens. See *G. ikariae*.

***G.* 'Magnet'.** Vigorous, late winter- and early spring-flowering bulb. H 8in (20cm). Has narrow, pleated, gray-green leaves. Bears flowers, ¼–1in (2–2.5cm) long, on long flower stalks; each inner petal is tipped with a V-shaped mark. Z6–10

***G.* 'Mighty Atom'.** Late winter-flowering bulb. H 5in (12cm). Leaves are gray-green, sometimes slightly pleated. Bears large flowers, 1¼–1½in (3–3.5cm) long, with an upside-down, V-shaped, green mark at the tip of each inner petal. Z6–10

G. nivalis (Common snowdrop). Late winter- and early spring-flowering bulb. H 4–6in (10–15cm), S 2–3in (5–8cm). Has narrowly strap-shaped, semierect, basal, gray-green leaves. Flowers are ¾–1in (2–2.5cm) long with a green mark at the tip of each inner petal. Z3–8. **'Flore Pleno'** illus. p.427. **'Howick Yellow'** see *G.n.* 'Sandersii'. **'Lutescens'** see *G.n.* 'Sandersii'. **'Pusey Green Tip'** illus. p.427. **'Sandersii'** (syn. *G.n.* 'Howick Yellow', *G.n.* 'Lutescens') illus. p.428. **'Scharlockii'** illus. p.428.

***G.* 'Ophelia'.** Vigorous, late winter-flowering bulb. H 8in (20cm). Has upright, flat to slightly pleated, gray-green leaves. Neat, double flowers, to ¾in (2cm) across, have green-blotched outer petals. Z6–10

***G. peshmenii*.** Mid- to late-fall-flowering bulb. H 5in (12cm). Leaves are short or undeveloped at flowering, narrow and gray-green when mature. Produces rounded or egg-shaped flowers, 1in (25cm) long; each inner petal is tipped with a Y- to U-shaped, green mark. Z6–10

G. plicatus*.** Robust late winter- and early spring-flowering bulb. H to 8in (20cm). Broad, pleated, leaves are glaucous, dark green. Produces rounded flowers, ¾–1¼in (2–3cm) long, with V- to U-shaped, sometimes variable green marks at the tip of each inner petal. Z3–8. **subsp. *byzantinus illus. p.427. **'Diggory'** has unusual, puckered, balloonlike flowers, flattened at the tips. **'Wendy's Gold'** (syn. *G.* 'Wendy's Gold'), H 5½in (14cm), has flowers with a yellow ovary and yellow-tipped inner petals.

G. reginae-olgae, syn. *G. corcyrensis*. Slender, fall-flowering bulb. H 6in (15cm). Has dull green, narrow leaves, gray-green beneath, with a central, grayish stripe. Produces faintly scented flowers, to 1–1¼in (2.5–3cm) long, with green-tipped inner petals, as the leaves emerge. Z6–10

G. rizehensis illus. p.428.

***G.* 'Rodmarton Arcturus'.** Vigorous, late winter- and early spring-flowering bulb. H 6in (15cm). Has slender, pleated, gray-green leaves. Bears elegant, rounded flowers with inner petals blotched green at the bases and in 2 spots at the tip notch. Z6–10

***G.* 'Sam Arnott'.** See *G.* 'S. Arnott'.

***G.* 'S. Arnott'**, syn. *G.* 'Arnott's Seedling', *G.* 'Sam Arnott'. Vigorous, late winter- and early spring-flowering bulb.
H 8in (20cm). Gray-green leaves are sometimes slightly pleated. Large, honey-scented, rounded flowers, to 1½in (3.5cm) long, have upside-down, V- to U- shaped green marks on each inner petal.
Z6–10

***G.* 'South Hayes'.** Spring-flowering bulb. H 5in (12cm). Has semierect, gray-green leaves, sometimes with slightly turned back edges. Outer petals, each with a bold, central, dark green mark, curve outward; inner petals are blotched dark green with narrow, white borders. Z6–10

***G.* 'Spindlestone Surprise'**. Midwinter-flowering bulb. H 8in (20cm). Has gray-green leaves with narrowly pleated edges. Flowers, to 1in (25cm) long, have greenish-yellow ovaries and inner petals each tipped with a U-shaped mark. Z6–10

***G.* 'Straffan'.** Vigorous, midspring-flowering bulb. H 5in (12cm). Has gray-green, sometimes pleated, leaves and sometimes 2 flower stalks. Bears flowers, 1in (25cm) long, with a small, upside-down, V-shaped, green mark on each inner petal. Z6–10
***G.* 'Wendy's Gold'.** See *G. plicatus* 'Wendy's Gold'
G. woronowii illus. p.428.

GALATELLA

ASTERACEAE/COMPOSITAE

Genus of upright perennials. The stems bear many narrow leaves and heads of daisylike flowers in lilac shades in late summer. Requires sun and well-drained soil. Suitable for seaside gardens. Propagate from seed in spring or by division in fall or early spring.
G. linosyris, syn. *Aster linosyris* (Goldilocks), illus. p.254.
G. sedifolia, syn. *Aster acris, A. sedifolius*. Bushy perennial. H 3ft (1m), S 2ft (60cm). Produces clusters of almost star-shaped, lavender-blue flower heads, with yellow centers, in fall. Has small, narrowly ovate, bright green leaves. Z4–7. **'Nana'**, H and S 20in (50cm), forms a compact dome of blooms.

GALAX

Wandflower

DIAPENSIACEAE

Genus of one species of tufted, evergreen perennial, grown for its foliage and for its flowers, borne in late spring and summer. Useful for underplanting shrubs. Requires shade and moist, peaty, acidic soil. Propagate by division of rooted runners in spring.
***G. aphylla*.** See *G. urceolata*.
G. urceolata, syn. *G. aphylla,* illus. p.336.

GALEGA

Goat's rue

PAPILIONACEAE/LEGUMINOSAE

Genus of tall, bushy perennials with pealike flowers. Grow in an open, sunny position and in any well-drained soil. Requires staking. Propagate by seed in fall or by division in winter.
***G.* 'Her Majesty'.** See *G.* 'His Majesty'.
***G.* 'His Majesty'**, syn. *G.* 'Her Majesty'. Vigorous, upright perennial. H to 5ft (1.5m), S 3ft (1m). From summer to early fall, produces spikes of small, pealike, clear lilac-mauve and white flowers. Bold, oblong to lance-shaped leaves consist of ovate leaflets. Z5–11
***G.* x *hartlandii* 'Lady Wilson'**, syn. *G.* 'Lady Wilson', illus. p.218.
***G.* 'Lady Wilson'.** See *G.* x *hartlandii* 'Lady Wilson'.
G. orientalis illus. p.239.

GALIUM

Bedstraw

RUBIACEAE

Genus of spring- and summer-flowering annuals and perennials, many of which are invasive weeds; *G. odoratum* is cultivated as groundcover. Grows well in partial shade, but tolerates sun and thrives in any well-drained soil. Propagate by division in early spring or fall.
G. odoratum, syn. *Asperula odorata* (Woodruff), illus. p.263.

GALTONIA

ASPARAGACEAE

Genus of summer- and fall-flowering bulbs, grown for their spikes of pendent, funnel-shaped, white or green flowers. Needs a sunny, sheltered site and fertile, well-drained soil that does not dry out in summer. Dies down in winter. May be lifted for replanting in spring. Propagate by seed in spring or by offsets in fall or spring.
G. candicans illus. p.383.
G. viridiflora illus. p.393.

GARDENIA

RUBIACEAE

Genus of evergreen shrubs and trees, grown for their flowers and foliage. Prefers partial shade and humus-rich, well-drained, neutral to acidic soil. Water containerized specimens freely when in full growth, moderately at other times. After flowering, shorten strong shoots to maintain a shapely habit. Propagate by greenwood cuttings in spring or by semiripe cuttings in summer. Mealy bug and whitefly may cause problems.
***G. augusta*.** See *G. jasminoides*.
***G. capensis*.** See *Rothmannia capensis*.
***G. grandiflora*.** See *G. jasminoides*.
G. jasminoides, syn. *G. augusta, G. grandiflora* (Cape jasmine, Common gardenia). **'Veitchi'** see *G.j.* 'Veitchiana'. **'Veitchiana'** (syn *G.j.*'Veitchii') illus. p.454.
***G. rothmannia*.** See *Rothmannia capensis*.
G. thunbergia (White gardenia). Evergreen, bushy shrub or small tree with white stems. H 6–15ft (2–5m), S 5ft (1.5m). Has elliptic, glossy, deep green leaves. Fragrant, 7–9-petaled, white flowers, 2½–4in (6–10cm) across, are borne in winter–spring. Z8–11 (min. 45°F/7°C)

GARRYA

GARRYACEAE

Genus of evergreen shrubs and small trees, grown for their catkins in winter and spring, which are longer and more attractive on male plants. Hard frost may damage catkins. Requires a sheltered, sunny site and tolerates any poor soil. Suitable for a warm, sunny wall. Dislikes being transplanted. Propagate by semiripe cuttings in summer.

G. elliptica (Silk tassel bush). Bushy, dense shrub or small tree. H and S 12ft (4m). Has leathery, wavy-edged, dark to gray-green leaves. Gray-green catkins are borne from midwinter to early spring. Z8–11. **'James Roof'** has very long, gray-green catkins with yellow anthers (illus. p.211).
***G.* x *issaquahensis* 'Glasnevin Wine'.** Bushy, upright, male shrub. H 12ft (4m), S 10ft (3m). Red-purple shoots bear ovate, glossy, slightly wavy-edged leaves. Long, dark greenish-purple, pendent catkins are produced in midwinter. Prone to leaf spot. Z6–10

GASTERIA

ASPHODELACEAE/LILIACEAE

Genus of variable, stemless or very short-stemmed, perennial succulents with thick, fleshy leaves, usually arranged in a fan, later becoming a tight rosette. Frost tender. Easy to grow, needing sun or partial shade and very well-drained soil. Propagate by seed, leaf cuttings, or division in spring or summer.
G. bicolor* var. *bicolor, syn. *G. caespitosa*. Fan-shaped, perennial succulent. H 6in (15cm), S 1ft (30cm). Produces triangular, thick, dark green leaves, 6in (15cm) long, with horny borders. Upper leaf surfaces have numerous white or pale green dots, usually in diagonal rows. Bears spikes of bell-shaped, orange-green flowers in spring. Z10–12 . **var. *liliputana***, syn. *G. liliputana*, illus. p.480.
***G. caespitosa*.** See *G. bicolor* var. *bicolor*.
G. carinata* var. *verrucosa, syn. *G. verrucosa*, illus. p.480.
***G. liliputana*.** See *G. bicolor* var. *liliputana*.
***G. verrucosa*.** See *G. carinata* var. *verrucosa*.

x *Gaulnettya* 'Pink Pixie'. See *Gaultheria* x *wisleyensis* 'Pink Pixie'.
x *Gaulnettya* 'Wisley Pearl'. See *Gaultheria* x *wisleyensis* 'Wisley Pearl'.

GAULTHERIA

SYN. x GAULNETTYA, PERNETTYA

ERICACEAE

Genus of evergreen shrubs, grown for their foliage, flowers and fruits. Grows best in shade or semishade and requires moist, peaty, acidic soil. Will tolerate sun provided the soil is permanently moist. Propagate by semiripe cuttings in summer or by seed in fall; for *G. shallon and G. trichophylla*, propagate by division in fall or spring. ⓘ All parts may cause mild stomach upset if ingested, except the fruits, which are edible.
G. cuneata illus. p.346.
G. mucronata, syn. *Pernettya mucronata*. Evergreen, bushy, dense shrub, spreading by underground stems. H and S 4ft (1.2m). Ovate, prickly, glossy, dark green leaves set off tiny, urn-shaped, white flowers in late spring and early summer. Spherical, fleshy fruit are produced; these vary in color between cultivars. Sprays of fruit are good for indoor display. Z8–9.
'Bell's Seedling' (bisexual) is useful for pollination. Has reddish shoots and large, dark fruits. Fruits of **'Cherry Ripe'** (female) are large and bright cherry-red. **'Edward Balls'** (male) produces sturdy, upright, red shoots and sharply spined, bright green leaves. **'Mulberry Wine'** (female) illus. p.164. **'Wintertime'** (female) illus. p.163.
G. myrsinoides, syn. *G. prostrata, Pernettya prostrata*. Evergreen, spreading shrub. H 6–12in (15–30cm), S 1ft (30cm) or more. Has ovate, leathery, dark green leaves. Urn-shaped, white flowers are produced in early summer and are followed by large, rounded, blue-purple fruits. Suitable for growing in a rock garden or peat bed. Z7–8
***G. nummularioides*.** Evergreen, compact shrub. H 4–6in (10–15cm), S 8in (20cm). Leaves are ovate to heart-shaped and leathery. Egg-shaped, pink-flushed, white flowers are borne in the upper leaf axils in late spring or summer. Produces rounded, blue-black fruits, but only rarely. Z7–8
G. procumbens illus. p.373.
***G. prostrata*.** See *G. myrsinoides*.
G. shallon (Shallon) illus. p.154.
G. tasmanica, syn. *Pernettya tasmanica*. Evergreen, mat-forming shrub. H 2–3in (5–8cm), S 8in (20cm). Has ovate, toothed, leathery leaves with wavy edges. Bell-shaped, white flowers in early summer are followed by rounded, red fruits. Good for a rock garden or peat bed. Z8–9
***G. trichophylla*.** Evergreen, compact shrub with creeping, underground stems. H 3–6in (7–15cm), S 8in (20cm). Bell-shaped, white or pink flowers in early summer are followed by egg-shaped, blue fruits produced from leaf axils. Leaves are small and ovate. Z7–9
***G.* x *wisleyensis* 'Pink Pixie'**, syn. x *Gaulnettya* 'Pink Pixie'. Evergreen, dense, bushy shrub. H and S 3ft (1m). Bears broadly ovate, deeply veined, dark green leaves. Small, urn-shaped, pale pink flowers, produced in late spring and early summer, are followed by spherical, purplish-red fruits. Z7–9. **'Wisley Pearl'** (syn. x *Gaulnettya* 'Wisley Pearl') illus. p.145.

GAURA

ONAGRACEAE

Genus of summer-flowering annuals, biennials, perennials, and subshrubs that are sometimes short-lived. Prefers full sun and light, well-drained soil. Propagate by softwood or semiripe cuttings in summer or by seed in fall or spring.
G. lindheimeri, syn. *Oenothera lindheimeri*, illus. p.231. **ROSYJANE ('Harrosy')** illus. p.301.

GAYLUSSACIA

Huckleberry

ERICACEAE

Genus of deciduous and evergreen shrubs, grown for their flowers, fruits and fall color. Needs sun or semishade and moist, peaty, acidic soil. Propagate by softwood cuttings in summer or by seed in fall.
G. baccata (Black huckleberry). Deciduous, bushy shrub. H and S 3ft (1m). Ovate, sticky, dark green leaves redden in fall. Produces clusters of small, urn-shaped, dull red flowers in late spring, followed by edible, spherical, black fruits. Z3–7

GAZANIA

ASTERACEAE/COMPOSITAE

Genus of annuals and evergreen perennials often grown as annuals. Useful for summer bedding, pots, and tubs. Requires sun and sandy soil. Propagate by seed in spring or by heel cuttings in spring or summer.
***G.* Daybreak Series.** Spreading perennials grown as annuals. H and S 8in (20cm). They have lance-shaped leaves

and, in summer, bear large, daisylike flower heads in a mixture of orange, yellow, pink, bronze and white. Flowers remain open in dull weather. Z8–10.
'Daybreak Bright Yellow' illus. p.323.
***G.* Daybreak XP Series.** Compact, robust perennials grown as annuals. H and S 8–10in (20–25cm). They have daisylike flower heads, often with bicolored outer petals. Z9–11. Flower heads of **'Strawberry Sundae Mixed'** may be in shades of rich dark pink or be creamy-white with strawberry-red stripes. **'Sunshine Mixed'** has creamy-white, bright yellow or orange flower heads, sometimes with maroon bases to the petals.
***G.* Kiss Series 'Kiss Orange Flame'** illus. p.324.
G. pinnata. Mat-forming perennial. H 6in (15cm), S 1ft (30cm). Daisylike, orange-red flower heads, with central, black rings, are produced singly in early summer above ovate, finely cut, hairy, bluish-gray leaves. Z8–10
***G.* Talent Series.** Vigorous perennials. H and S to 10in (25cm). Have highly ornamental, mid-green leaves, to 6in (15cm) long, gray-felted on both surfaces. In summer, they produce solitary, yellow, orange, pink or brown flower heads on short stems just above the leaves. Z8–10

GELSEMIUM

GELSEMIACEAE/LOGANIACEAE

Genus of evergreen, twining, perennial climbers, grown for their fragrant, jasminelike flowers. In cool climates, best grown under glass. Provide full light and fertile, well-drained soil. Water regularly, less in cold weather. Stems require support and should be thinned out after flowering or in spring. Propagate by seed sown in spring or by semiripe cuttings in summer.
G. sempervirens illus. p.195.

GENISTA

SYN. CHAMAESPARTIUM
Broom

PAPILIONACEAE/LEGUMINOSAE

Genus of mainly deciduous, sometimes almost leafless, sometimes spiny, shrubs and occasionally trees, grown for their abundant, small, pealike flowers. Does best in full sun and not over-rich, well-drained soil. Resents being transplanted. Propagate species by softwood or semiripe cuttings in summer or by seed in fall, selected forms by softwood cuttings only in summer.
G. aetnensis (Mount Etna broom) illus. p.89.
G. canariensis, syn. *Cytisus canariensis*. Evergreen, densely branching shrub with hairy, green stems. H 6ft (2m), S 5ft (1.5m). Has almost stalkless, lobed leaves, densely hairy beneath. Bears short, dense, terminal clusters of up to 20 pealike, sweetly scented, bright yellow flowers from early spring to midsummer, followed by hairy pods. Z8–11
G. cinerea illus. p.116.
G. fragrans of gardens. See *Genista spachiana*.
G. hispanica (Spanish gorse) illus. p.160.
G. lydia illus. p.345.
G. monosperma. See *Retama monosperma*.
G. pilosa. Deciduous, prostrate or domed shrub. H and S 1ft (30cm). Narrowly ovate leaves are silky-haired beneath. Bright yellow flowers on short stalks are borne in leaf axils in summer. Useful on a bank or as groundcover. Propagate by semiripe cuttings in summer. Z9–11.
'Procumbens', H to 8in (20cm), has prostrate stems.
***G.* 'Porlock'**, syn. *Cytisus* 'Porlock'. Semievergreen, vigorous, upright shrub with arching stems. H and S 8ft (2.5m). Bears spikes of fragrant, bright yellow flowers in early spring. Suitable for coastal and mild areas and conservatories; otherwise, requires a sunny wall on well-drained soil. Z8–11
G. sagittalis, syn. *Chamaespartium sagittale,* illus. p.373.
G. spachiana, syn. *Cytisus canariensis* of gardens, *C. racemosus* of gardens, *Genista fragrans* of gardens. Vigorous, evergreen, arching shrub. H and S 10ft (3m). Has dark green leaves with 3 ovate leaflets. Produces long, slender clusters of fragrant, golden-yellow flowers in winter and early spring. Often grown as a houseplant. Z9–11 (min. 45°F/7°C)
G. tinctoria (Dyer's greenweed) illus. p.148. **'Royal Gold'** is a deciduous, upright shrub. H and S 3ft (1m). Produces long, conical sprays of golden-yellow flowers in spring–summer and dark green leaves that are narrowly lance-shaped. Z4–8

GENTIANA

Gentian

GENTIANACEAE

Genus of annuals, biennials and perennials, some of which are semievergreen or evergreen, grown for their usually blue flowers. Excellent for rock gardens and peat beds. Prefers sun or semishade and humus-rich, well-drained, moist, neutral to acidic soil. Some species grow naturally on limestone soils. Propagate by division or offshoots in spring or by seed in fall. Divide fall-flowering species and *G. clusii* every 3 years in early spring and replant in fresh soil. See also feature panel p.370.
G. acaulis, syn. *G. excisa, G. kochiana* (Trumpet gentian; illus. p.370). Evergreen, clump-forming perennial. H in leaf ¾in (2cm), S to 4in (10cm) or more. Has narrowly ovate, glossy leaves and trumpet-shaped, deep blue flowers, with green-spotted throats, on short stems in spring and often in fall. Tolerates alkaline soil. Z5–8. **'Belvedere'** bears large, deep blue flowers with copious green spots inside. **'Coelestina'** has large, lighter blue flowers, to 3in (7cm) long.
G. angustifolia. Evergreen, clump-forming perennial. H 4in (10cm), S 8in (20cm). Has rosettes of oblong, dull green leaves and, in summer, solitary, tubular, sky-blue flowers, spotted green inside. Tolerates alkaline soil. Z6–8
G. asclepiadea (Willow gentian) illus. p.250. **var. *alba*** is a herbaceous perennial with erect, then arching stems. H to 3ft (90cm), S to 2ft (60cm). Has opposite pairs or whorls of narrow, ovate leaves. In late summer to fall bears arching sprays of trumpet-shaped, deep green-tinged, white flowers. Z6–9
***G.* 'Blue Silk'** (illus. p.370). Semievergreen, procumbent perennial. H 2in (5cm), S to 5in (12cm) or more. Has basal rosettes of lance-shaped, mid-green leaves. In late summer and fall, bears upright, trumpet-shaped, deep blue flowers, banded white and green-spotted on the outer surfaces. Requires acidic soil. Z4–7
G. clusii (Trumpet gentian). Evergreen, clump-forming perennial. H 2in (5cm), S 6–9in (15–23cm). Has rosettes of ovate, glossy, dark green leaves. Trumpet-shaped, azure-blue flowers, with green-spotted, paler throats, are borne on 1–4in (2.5–10cm) stems in early summer. Tolerates alkaline soils. Z4–7
***G.* 'Ettrick'** (illus. p.370). Evergreen, procumbent, perennial. H 2in (5cm), S to 5in (12cm) or more. Has basal rosettes of linear-lance-shaped, mid-green leaves. In late summer and fall bears upright, trumpet-shaped, clear white flowers, flecked with blue spots on the inner surfaces. Requires acidic soil. Z5–7
***G.* 'Eugen's Allerbester'** (illus. p.370). Vigorous, evergreen, procumbent perennial. H 2in (5cm), S to 8in (20cm) or more. Has basal rosettes of linear, mid-green leaves. In late summer and fall bears upright, trumpet-shaped, double, deep blue flowers, banded white on the outer surfaces. Requires acidic soil. Z5–7
G. excisa. See *G. acaulis*.
G. gracilipes, syn. *G. purdomii*. Semievergreen, tufted perennial with arching stems. H 6in (15cm), S 8in (20cm). Forms a central rosette of long, strap-shaped, dark green leaves from which lax flower stems bearing tubular, dark purplish-blue flowers, greenish within, are produced in summer. Tolerates some shade. Z6–8
***G.* 'Inverleith'** (illus. p.370). Vigorous, semievergreen, procumbent perennial. H 2in (5cm), S to 5in (12cm) or more. Has basal rosettes of linear to lance-shaped, mid-green leaves. In fall, bears upright, trumpet-shaped, bright blue flowers, banded green on the outer surfaces. Requires acidic soil. Z5–7
G. kochiana. See *G. acaulis*.
G. lutea (Yellow gentian) illus. p.243.
***G.* x *macaulayi* 'Wells's Variety'** (illus. p.370). Semievergreen, prostrate perennial. H in flower 2in (5cm), S 8in (20cm). Has trumpet-shaped, mid-blue flowers in late summer and fall. Spreading stems are clothed in narrow, mid-green leaves. Requires moist, acidic soil. Z5–7
G. ornata. Semievergreen, clump-forming perennial with small, over-wintering rosettes. H 2in (5cm), S 4in (10cm). Forms a central rosette of grasslike leaves. In fall, each stem tip bears an upright, bell-shaped, mid-blue flower, with a white throat and deep blue stripes shading to creamy-white outside. Requires acidic soil and a moist atmosphere. Z5–7
G. purdomii. See *G. gracilipes*.
G. saxosa (illus. p.370). Evergreen, hummock-forming perennial. H 2in (5cm), S 6in (15cm). Clothed in small, spoon-shaped, fleshy, dark green leaves. Produces small, upturned, bell-shaped, white flowers in early summer. Short-lived scree plant. Tolerates alkaline soils. Z4–8
G. scabra. Deciduous, upright perennial. H 1ft (30cm), S 8–12in (20–30cm). Has long, ovate to lance-shaped, deep green stem leaves borne in opposite pairs on herbaceous stems. Narrowly bell-shaped, deep blue flowers are borne in terminal clusters and also in pairs in upper leaf axils in mid-fall. Requires acidic soil. Z4–8
G. septemfida illus. p.346.
***G.* 'Shot Silk'** (illus. p.370). Semievergreen, procumbent perennial. H 2in (5cm), S to 5in (12cm) or more. Has basal rosettes of linear to lance-shaped, deep green leaves. In late summer and fall produces upright, trumpet-shaped, silky, deep purple-blue flowers, banded green and purple on the outer surfaces. Requires acidic soil. Z5–7
G. sino-ornata (illus. p.370). Semievergreen, prostrate, spreading perennial. H in flower 2in (5cm), S to 1ft (30cm). In fall, bears trumpet-shaped, rich blue flowers, striped purple-blue and greenish-white outside. Leaves are narrow. Requires acidic soil. Z5–7
***G.* 'Soutra'** (illus. p.370). Evergreen, procumbent, perennial. H 2in (5cm), S to 5in (12cm) or more. Has basal rosettes of linear-lance-shaped, mid-green leaves. In late summer and fall, bears upright, trumpetlike, white flowers, suffused pale green on the outer surfaces. Requires acidic soil. Z5–7
***G.* 'Strathmore'** (illus. p.370). Semievergreen, procumbent perennial. H 2in (5cm), S to 5in (12cm) or more. Has basal rosettes of linear to lance-shaped, pale green leaves. In late summer and fall produces upright, trumpet-shaped, blue-mauve flowers, with vertical, greenish-white stripes on the outer surfaces. Requires acidic soil. Z5–7
G. verna (Spring gentian) illus. p.356.

GERANIUM

Cranesbill

GERANIACEAE

Genus of annuals, biennials, and herbaceous, semievergreen, evergreen, or sometimes tuberous, perennials, grown for their flowers and often as groundcover. Compact species are suitable for rock gardens. Most species prefer sun, but some do better in shade. Will grow in all but waterlogged soils. Propagate by semiripe cuttings in summer or by seed or division in fall or spring. Cultivars should be propagated by division or cuttings only.
G. anemonifolium of gardens. See *G. palmatum*.
***G.* 'Anne Thomson'**. Spreading perennial. H to 5ft (1.5m), S to 5½ft (1.6m). Has lobed, deeply divided, yellow-green leaves. In summer, bears abundant, vivid reddish-purple flowers, with black veins coalescing at a black center. Z7–10
***G.* 'Ann Folkard'.** Spreading herbaceous perennial. H 20in (50cm), S 3ft (1m). Has rounded, deeply divided, yellowish-green leaves. In summer–fall, bears abundant, shallowly cup-shaped, rich magenta flowers with black veins. Z5–9
G. armenum. See *G. psilostemon*.

***G.* 'Brookside'.** Spreading perennial. H to 2ft (60cm), S to 6ft (2m). Has lobed, deeply divided, yellowish-green leaves. In spring, bears white-centered, violet-blue flowers. Z3–9

***G. cinereum*.** Evergreen, rosetted perennial with spreading flowering stems. H 6in (15cm), S 1ft (30cm). Has cup-shaped flowers, either white to pale pink, strongly veined with purple, or pure white, on lax stems in late spring and summer. Basal leaves are rounded, deeply divided, soft and gray-green. Good for a large rock garden. Z5–9. **'Ballerina'** illus. p.366.

***G. clarkei* 'Kashmir Purple'.** Carpeting, rhizomatous, herbaceous perennial. H and S 18–24in (45–60cm). Bears loose clusters of cup-shaped, deep purple, red-veined flowers in summer. Rounded leaves are deeply divided and finely veined. Z5–8. **'Kashmir White'** illus. p.263.

G. dalmaticum illus. p.363.

***G.* 'Danny Boy'.** Spreading perennial. H 20in (50cm), S 5½ft (1.6m). Has deeply lobed, mid-green, hairy leaves on long stalks. In summer, bears pairs of intensely purple flowers with red veins. Z6–10

***G.* 'Dilys'.** Spreading perennial with lobed basal leaves. H to 22in (55cm), S to 5ft (1.5m). Bears a profusion of red-veined, reddish-purple flowers in summer. Z3–9

***G. endressii*.** Semievergreen, compact, carpeting perennial. H 18in (45cm), S 2ft (60cm). Has small, lobed leaves and cup-shaped, rose-pink flowers borne throughout summer. Z5–8. **'Wargrave Pink'** see *G.* x *oxonianum* 'Wargrave Pink'.

***G. grandiflorum*.** See *G. himalayense*.

G. himalayense, syn. *G. grandiflorum, G. himalayense* var. *meeboldii, G. meeboldii,* illus. p.270. **var. *meeboldii*** see *G. himalayense*.

***G. ibericum*.** Clump-forming perennial. H and S 2ft (60cm). In summer, produces sprays of 5-petaled, saucer-shaped, violet-blue flowers. Has heart-shaped, lobed or cut, hairy leaves. Z5–8

***G.* 'Ivan'.** Mat-forming to spreading perennial. H to 32in (80cm), S to 5½ft (1.7m). Has lobed, toothed, yellow-green leaves, flecked red with age. From early summer to fall, produces reddish-purple flowers, with darker veins and purple-black eyes. Z3–9

G. macrorrhizum illus. p.269. **'Ingwersen's Variety'** illus. p.256. **'White Ness'**, is a semievergreen, carpeting perennial. H to 20in (50cm), S to 3½ft (1.1m). Rounded, divided leaves are rhubarb-scented. Bears pure white flowers in early summer. Z4–8

***G. maculatum*.** Upright, clump-forming perennial. H 30in (75cm), S 18in (45cm). In spring, bears heads of flattish, pinkish-lilac flowers above rounded, lobed, mid-green leaves that turn fawn and red in fall. Z4–8. **'Elizabeth Ann'** has dark reddish-brown leaves and pale pinkish-purple flowers.

***G. maderense*.** Vigorous, evergreen, bushy perennial with a woody base, usually short-lived or grown as a biennial. H and S 3ft (1m). Produces large sprays of shallowly cup-shaped, deep magenta flowers in summer above palmate, finely cut, dark green leaves. Z8–9

G.* x *magnificum illus. p.269.

***G.* 'Mavis Simpson'**. Prostrate perennial. H to 8in (20cm), S to 22in (55cm). Has mid-green leaves with faint, pale brown blotches. From spring to summer, bears pale pink flowers with paler centers and darker veins. Z5–9

***G. meeboldii*.** See *G. himalayense*.

***G. nodosum*.** Clump-forming perennial. H and S 18in (45cm). Has lobed, glossy leaves and delicate, cup-shaped, lilac or lilac-pink flowers borne in spring and summer. Tolerates deep shade. Z4–8

G. orientalitibeticum, syn. *G. stapfianum* var. *roseum* of gardens, illus. p.339.

***G.* 'Orion'** illus. p.280.

***G.* x *oxonianum*.** Vigorous, clump-forming, evergreen perennial. H to 32in (80cm), S 2ft (60cm). Light green, basal leaves have toothed, wrinkled and veined lobes. Bears funnel-shaped, pink flowers, with darker veins and notched petals, from late spring to midfall. Z7–10. **'A.T. Johnson'**, H 1ft (30cm), has silvery pink flowers and is very free-flowering. **'Beholder's Eye'** has deep reddish-purple flowers with white eyes. **'Claridge Druce'**, H and S 18–30in (45–75cm), is very vigorous. Bears cup-shaped darker-veined, rose-pink flowers above grayish-green, glossy leaves. **'Wargrave Pink'** (syn. *G. endressii* 'Wargrave Pink') illus. p.265. **'Winscombe'**, H 24–30in (60–75cm), S 18in (45cm), has cup-shaped, deep pink flowers, which fade to pale pink, borne throughout summer.

G. palmatum, syn. *G. anemonifolium.* (illus. p.238).

G. phaeum (Mourning widow) illus. p.223. **'Our Pat'** is a clump-forming perennial. H 30in (75cm), S 18in (45cm). Has lobed, soft green leaves and bears purple-black flowers with silvery white eyes in late spring. Z4–8

G. pratense (Meadow cranesbill). Clump-forming perennial. H 30in (75cm), S 2ft (60cm). Bears 5-petaled, saucer-shaped, violet-blue flowers on branching stems in summer. Rounded, lobed to deeply divided, mid-green leaves become bronze in fall. Z4–8. **'Mrs. Kendall Clark'** illus. p.239. **'Plenum Violaceum'**, H 4½ft (1.3m), has double, deep violet-blue flowers with purple-blue centers.

G. psilostemon, syn. *G. armenum,* illus. p.233.

***G. pylzowianum*.** Spreading perennial with underground runners and tiny tubers. H 5–10in (12–25cm), S 10in (25cm) or more. Bears semicircular, deeply cut, dark green leaves and, in late spring and summer, trumpet-shaped, green-centered, deep rose-pink flowers. May be invasive. Z5–8

G. renardii illus. p.264.

***G.* x *riversleaianum* 'Russell Prichard'.** Herbaceous, clump-forming perennial. H 1ft (30cm), S 3ft (1m). Saucer-shaped, clear pink flowers are borne singly or in small clusters from early summer to fall. Rounded leaves are lobed and gray-green. Z6–8

***G.* Rozanne ('Gerwat')** illus. p.271.

G. sanguineum (Bloody cranesbill) illus. p.340. **'Album'** is a lax, spreading perennial. H 1ft (30cm), S 16in (40cm). Round, deeply divided, dark green leaves often color well in fall. Bears pure white flowers over many weeks in summer. **'Ankum's Pride'**, H 8in (20cm) S 28in (70cm), bears purplish-pink flowers, veined blue-purple. **'Shepherd's Warning'**, H and S 6in (15cm), is compact, with deep red-pink flowers. **var. *striatum*** illus. p.362. Z3–8

G. stapfianum* var. *roseum of gardens. See *G. orientalitibeticum*.

G. subcaulescens illus. p.366.

***G. sylvaticum* 'Mayflower'** illus. p.239.

***G. wallichianum* 'Buxton's Variety'.** Spreading perennial. H 12–18in (30–45cm), S 3ft (90cm). Has luxuriant, white-flecked leaves and large, white-centered, blue or blue-purple flowers from midsummer to fall. Prefers partial shade. Z4–8

GERBERA

ASTERACEAE/COMPOSITAE

Genus of perennials, flowering from summer to winter depending on growing conditions. Grow in full sun and in light, sandy soil. Propagate by heel cuttings from sideshoots in summer or by seed in fall or early spring.

***G.* 'Amgerbpink'.** See *G.* Everlast Pink.

***G.* Everlast Pink ('Amgerbpink').** Clump-forming perennial. H 14in (35cm), S 1ft (30cm). Has ovate, irregularly lobed leaves. Large, daisylike, soft pink flower heads are borne on tall, slender stems in mid- and late summer. Z11

G. jamesonii (Barberton daisy, Transvaal daisy) illus. p.306.

GEUM

Avens

ROSACEAE

Genus of summer-flowering perennials. Does best in sun and prefers moist but well-drained soil. Propagate by division or by seed in fall.

***G.* 'Bell Bank'**, syn. *G. rivale* 'Bell Bank', illus. p.268.

G.* x *borisii of gardens. See *G. coccineum*.

G. chiloense, syn. *G. coccineum* of gardens. Clump-forming perennial. H 16–24in (40–60cm), S 2ft (60cm). Saucer-shaped, scarlet flowers are produced from early to late summer. Pinnate leaves are deeply lobed and toothed. Z5–9

G. coccineum, syn. *G.* x *borisii* of gardens, illus. p.439.

G. coccineum of gardens. See *G. chiloense*.

***G.* 'Fire Opal'.** Clump-forming perennial. H 32in (80cm), S 18in (45cm). Rounded, double, bronze-scarlet flowers are borne in small clusters in summer above oblong to lance-shaped, lobed, fresh green leaves. Z5–9

***G.* 'Goldball'.** See *G.* 'Lady Stratheden'.

***G.* 'Lady Stratheden'**, syn. *G.* 'Goldball', illus. p.276.

***G.* 'Lionel Cox'**, syn. *G. rivale* 'Lionel Cox'. Clump-forming perennial. H and S 1ft (30cm). In early summer, produces small clusters of 5-petaled, cup-shaped, shrimp-red flowers above oblong to lance-shaped, lobed, fresh green leaves. Z3–7

G. montanum (Alpine avens). Dense, clump-forming, rhizomatous perennial that spreads slowly. H 4in (10cm), S 9in (23cm). Shallowly cup-shaped, golden-yellow flowers in early summer are followed by fluffy, buff-colored seed heads. Leaves are pinnate, each with a large, rounded, terminal lobe. Suitable for a rock garden. Z4–8

***G.* 'Mrs. J. Bradshaw'.** Clump-forming perennial. H 32in (80cm), S 18in (45cm). Rounded, double, crimson flowers are borne in small sprays in summer. Fresh green leaves are oblong to lance-shaped and lobed. Z5–9

***G. rivale* 'Bell Bank'.** See *G.* 'Bell Bank'.

'Lionel Cox' see *G.* 'Lionel Cox'.

GEVUINA

PROTEACEAE

Genus of evergreen trees, grown for their foliage and flowers in summer. Requires semishade and fertile, moist but well-drained soil. Propagate by semiripe cuttings during late summer or by seed in fall.

G. avellana (Chilean hazel, Chile nut). Evergreen, conical tree or large shrub. H and S 30ft (10m). Has large, glossy, dark green leaves divided into numerous ovate, toothed leaflets. Slender spires of spidery, white flowers produced in late summer are followed by cherrylike, red, then black fruits. Z9–10

GIBBAEUM

AIZOACEAE

Genus of clump-forming, fleshy, perennial succulents with pairs of small, swollen leaves, often of unequal size. Needs full sun and very well-drained soil. Water very lightly in early winter. Propagate by seed or stem cuttings in spring or summer.

***G. petrense*.** Carpeting, perennial succulent. H 1½in (3cm), S 1ft (30cm) or more. Each branch bears 1 or 2 pairs of thick, triangular, pale gray-green leaves, ½in (1cm) long. Bears daisylike, pink-red flowers, ⅝in (1.5cm) across, in spring. Z12–15 (min. 45°F/7°C)

G. velutinum illus. p.481.

GILIA

POLEMONIACEAE

Genus of summer- and fall-flowering annuals, occasionally perennials. Grows best in sun and in fertile, very well-drained soil. Stems may need support, especially on windy sites. Propagate by seed sown outdoors in spring, or in early fall for early flowering the following year.

***G. achilleifolia*.** Fast-growing, upright, bushy annual. H 2ft (60cm), S 8in (20cm). Finely divided, mid-green leaves are hairy and sticky. Heads of funnel-shaped, blue flowers, 1in (25cm) across, are produced in summer. Z6–10

G. capitata (Queen Anne's thimbles) illus. p.314.

GILLENIA

ROSACEAE

Genus of summer-flowering perennials. Grow in a position in sun or shade and in any well-drained soil. Needs staking. Propagate by seed in fall or in spring.

G. trifoliata illus. p.231.

GINKGO

GINKGOACEAE

See also CONIFERS.
G. biloba (Maidenhair tree) illus. p.97. **'Saratoga'**, is an upright conical tree. H to 40ft (12m), S 30ft (10m). Has variably shaped, dark green leaves, that give a lacy effect. **'Troll'**, H and S to 3ft (1m), is very slow-growing and ideal for a container. Z5–9

GLADIOLUS

SYN. HOMOGLOSSUM, ACIDERANTHERA

IRIDACEAE

Genus of corms, each producing a spike of funnel-shaped flowers and a fan of erect, narrow, linear or sword-shaped leaves on the basal part of the flower stem. Suitable for cutting or for planting in mixed borders; most hybrids are also good for exhibition. Needs a sunny and fertile, well-drained site. Plant 4–6in (10–15cm) deep and the same distance apart in spring. Water well in summer and support tall cultivars with canes. Where marginally hardy, lift corms in fall, cut off stems, and dry in a frost-free but cool place. Pot spring-flowering plants in fall and place in a cool greenhouse; after flowering, dry off corms during summer months and repot in fall.

Propagate by seed or by removal of young cormlets from parent. Seed sown in early spring in a cool greenhouse will take 2–3 years to flower and may not breed true to type. Store cormlets, removed after lifting, in frost-free conditions and plant out 2in (5cm) deep in spring; lift in winter as for mature corms. They will flower in 1–2 years.

While in store, corms may be attacked by various rots. Protect sound, healthy corms by dusting with a fungicide or soaking in a fungicide solution before drying; store in an airy, cool, frost-free place. Gladiolus scab causes blotches on leaves; gladiolus yellows shows as yellowing stripes on leaves, which then die; in both cases destroy affected corms. As a preventive measure, always plant healthy corms in a new site each year. See also feature panel p.384.

Gladiolus hybrids

Most hybrids are derived from *G.* x *hortulanus*. All have stiff leaves, 8–20in (20–50cm) long, ranging from pale willow-green or steely blue-green to almost bottle-green. All are good for flower arranging. They are divided into Grandiflorus, Primulinus, and Nanus Groups.

Grandiflorus Group produces long, densely packed spikes of funnel-shaped flowers, with ruffled, thick-textured petals or plain-edged, thin-textured ones. Giant-flowered hybrids have a bottom flower of over 5½in (14cm) across (flower head is 26–32in [65–80cm] long); large-flowered 4½–5½in (11–14cm) across (flower head 2–3ft [60cm–1m] long); medium-flowered 3½–4½in (9–11cm) across (flower head 24–32in [60–80cm] long); small-flowered 2½–3½in (6–9cm) across (flower head 20–28in [50–70cm] long); miniature-flowered 1½–2½in (3.5–6cm) across (flower head 16–24in [40–60cm] long).

Primulinus Group has fairly loose spikes of plain-edged, funnel-shaped flowers, 1½–3in (3.5–7cm) across, each with a strongly hooded, upper petal over the stigma and anthers. Flower heads are 1ft (30cm) or more long.

Nanus Group produces 2 or 3 slender spikes, with loosely arranged flowers, s1½–2in (4–5cm) across. Flower heads are 9–14in (22–35cm) long.

***G.* 'Amanda Mahy'.** Nanus Group gladiolus. H 32in (80cm), S 3–4in (8–10cm). Produces spikes of up to 7 salmon-pink flowers, with lip tepals flecked violet and white, in early summer. Z8–10

***G.* 'Amsterdam'.** Grandiflorus Group, giant-flowered gladiolus. H 5½ft (1.7m), S 1ft (30cm). Spikes of up to 27 slightly upward-facing, finely ruffled, white flowers are produced in late summer. Good for exhibition. Z8–10

***G.* 'Beauty of Holland'.** Grandiflorus Group, large-flowered gladiolus. H 5½ft (1.7m), S 6in (15cm). Produces spikes of up to 27 ruffled, pink-margined, white flowers in midsummer. Good for exhibition. Z8–10

***G.* 'Bernadette'.** Nanus Group gladiolus. H to 28in (70cm), S 3–4in (8–10cm). Bears spikes of red-and-yellow bicolored flowers in summer. Z8–10

***G.* 'Black Jack'.** Grandiflorus Group, large-flowered gladiolus. H 3ft (90cm), S 3in (8cm). Bears spikes of black-edged, dark maroon flowers in summer. Z8–10

***G.* 'Black Lash'.** Grandiflorus Group, small-flowered gladiolus. H 4½ft (1.3m), S 6–8in (15–20cm). Bears spikes of up to 25 lightly ruffled, deep black-rose flowers, with pointed, slightly reflexed petals, from late summer to early fall. Z8–10

***G. blandus*.** See *G. carneus*.

***G. blandus* var. *carneus*.** See *G. carneus*.

***G.* 'Blue Frost'** (illus. p.384). Grandiflorus Group, large-flowered gladiolus. H 4ft (1.2m), S 6in (15cm). In midsummer, bears spikes of white flowers with ruffled, lilac edges and darker purple eyes. Z8–10

***G. byzantinus*.** See *G. communis* subsp. *byzantinus*.

***G. callianthus*.** See *G. murielae*.

***G. cardinalis*.** Summer-flowering corm. H to 4ft (1.2m), S 4–6in (10–15cm). Arching stem bears a spike of up to 12 widely funnel-shaped flowers, each 3in (8cm) long and bright red with spear-shaped, white marks on lower 3 petals. Z8–10

G. carneus, syn. *G. blandus*, *G. blandus* var. *carneus*. Spring-flowering corm. H 8–16in (20–40cm), S 3–4in (8–10cm). Stem bears a loose spike of 3–12 widely funnel-shaped, white or pink flowers, 1½–2½in (4–6cm) long, marked on lower petals with darker red or yellow blotches. Z8–10

***G.* 'Charmer'.** Grandiflorus Group, large-flowered gladiolus. H 5½ft (1.7m), S 6in (15cm). In early and mid-summer, produces spikes of up to 27 strongly ruffled, almost translucent, light pink flowers. Good for exhibition. Z8–10

***G.* 'Charming Lady'.** Nanus Group gladiolus. H 28in (70cm), S 3in (8cm). Bears spikes of pink flowers, with pale lilac throats, from early to midsummer. Z8–10

***G.* 'Columbine'** (illus. p.384). Primulinus Group, small-flowered gladiolus. H 3ft (90cm), S 3in (8cm). In early summer produces spikes of light carmine-rose flowers with creamy-white throats. Z8–10

***G.* x *colvillii* 'The Bride'.** See *G.* 'The Bride'.

G. communis* subsp. *byzantinus, syn. *G. byzantinus*, illus. p.410.

***G.* 'Côte d'Azur'.** Grandiflorus Group, giant-flowered gladiolus. H 5½ft (1.7m), S 6in (15cm). Bears spikes of up to 23 ruffled, mid-blue flowers, with pale blue throats, in early summer. Good for exhibition. Z8–10

G. dalenii, syn. *G. natalensis, G. psittacinus*. Vigorous, summer-flowering corm. H to 5ft (1.5m), S 4–6in (10–15cm). Produces up to 14 red, yellow-orange, yellow or greenish-yellow flowers, 3–5in (8–12cm) long, each with a hooded, upper petal and often flecked or streaked red. Z8–10

***G.* 'Drama'** (illus. p.384). Grandiflorus Group, large-flowered gladiolus. H 5½ft (1.7m), S 10–12in (25–30cm). In late summer, produces spikes of up to 26 lightly ruffled, deep watermelon-pink flowers with red-marked, yellow throats. Superb for exhibition. Z8–10

***G.* 'Dutch Mountain'.** Grandiflorus Group, large-flowered gladiolus. H 5½ft (1.7m), S 6in (15cm). In midsummer, produces spikes of up to 25 slightly ruffled, white flowers with small green marks in the throats. Good for exhibition. Z8–10

***G.* 'Esta Bonita'.** Grandiflorus Group, giant-flowered gladiolus. H 5½ft (1.7m), S 1ft (30cm). Produces spikes of up to 24 apricot-orange flowers, slightly darker toward petal edges, in late summer. Good for exhibition. Z8–10

***G.* 'Firestorm'.** Grandiflorus Group, miniature-flowered gladiolus. H 3½ft (1.1m), S 3–4in (8–10cm). Spikes of up to 22 loosely spaced, ruffled, vivid scarlet flowers, with yellowish-white flecks on the outer tepals, are produced in early summer. Is good for exhibition. Z8–10

***G.* 'Flevo Bambino'.** Grandiflorus Group, medium-flowered gladiolus. H 2ft (60cm), S 3in (8cm). From late summer to early fall bears spikes of pale yellow, purple-throated flowers. Z8–10

***G.* 'Georgette'.** Grandiflorus Group, small-flowered gladiolus. H 4ft (1.2m), S 3–4in (8–10cm). Produces spikes of up to 22 slightly ruffled, yellow-suffused, orange flowers, with large lemon-yellow throats, in midsummer. Good for exhibition. Z8–10

***G.* 'Halley'.** Nanus Group gladiolus. H 3ft (1m), S 3–4in (8–10cm). In early summer produces spikes bearing up to 7 white-flushed, pale yellow flowers, each with bright red marks in the throats. Z8–10

***G.* 'Her Majesty'** (illus. p.384). Grandiflorus Group, large-flowered gladiolus. H 46in (115cm), S 6in (15cm). Produces spikes of sky-blue flowers, with much paler throats, in midsummer. Z8–10

***G.* 'Ice Cap'.** Grandiflorus Group, large-flowered gladiolus. H 5½ft (1.7m), S 10–12in (25–30cm). Produces spikes of up to 27 heavily ruffled, ice-white flowers from late summer to early fall. Z8–10

***G.* 'Impressive'** (illus. p.384). Nanus Group gladiolus. H 28in (70cm), S 3in (8cm). Spikes of pale pink flowers, with hot pink markings, are borne in early summer. Z8–10

G. italicus, syn. *G. segetum*. Early summer-flowering corm. H to 3ft (1m), S 4–6in (10–15cm). Bears a loose spike of up to 20 pinkish-purple flowers, 1½–2in (4–5cm) long, and has a fan of erect, sword-shaped leaves from the basal part of stem. Z8–10

***G.* 'Magistral'.** Grandiflorus Group, large-flowered gladiolus. H 6ft (1.8m), S 6in (15cm). Produces spikes of up to 24 ruffled, oyster-white flowers, with magenta lines, in midsummer. Good for exhibition. Z8–10

***G.* 'Morning Gold'** (illus. p.384). Grandiflorus Group, large-flowered gladiolus. H 3ft (1m), S 4in (10cm). Spikes of green-tinted, golden-yellow flowers are produced from midsummer to early fall. Z8–10

G. murielae, syn. *Acidanthera bicolor* var. *murielae, A. murielae, G. callianthus*. (illus. p.383).

***G. natalensis*.** See *G. dalenii*.

***G.* 'Nova Lux'** (illus. p.384). Grandiflorus Group, giant-flowered gladiolus. H 3ft (1m), S 6in (15cm). Spikes of clear yellow flowers are borne in midsummer. Z8–10

***G.* 'Nymph'** (illus. p.384). Nanus Group gladiolus. H 28in (70cm), S 3in (8cm). In early summer produces spikes of creamy-white flowers, with teardrop-shaped, pink-edged markings on the lower petals. Z8–10

***G.* 'Oscar'** (illus. p.384). Grandiflorus Group, large-flowered gladiolus. H 3ft (1m), S 6in (15cm). Produces spikes of velvety-red flowers in midsummer. Z8–10

G. papilio illus. p.395. **Purpureoauratus Group** (syn. *G. purpureoauratus*) is a summer- or fall-flowering corm. H to 3ft (1m), S 6in (15cm). Has greenish-yellow flowers, with lower petals each blotched red-brown at the throat. Z8–10

***G.* 'Passos'.** Grandiflorus Group, large-flowered gladiolus. H 4ft (1.2m), S 6in (15cm). Spikes of purple-flecked, pale lilac to white flowers, with dark purple throats, are produced in midsummer. Z8–10

***G.* 'Peter Pears'** (illus. p.384). Grandiflorus Group, large-flowered gladiolus. H 5½ft (1.7m), S 14in (35cm). In late summer, has spikes of up to 26 apricot-salmon flowers with red throat marks. Excellent for exhibition. Z8–10

***G.* 'Pink Lady'.** Grandiflorus Group, large-flowered gladiolus. H 5ft (1.5m), S 10–12in (25–30cm). Has spikes of up to 25 lightly ruffled, deep rose-pink flowers, with large, white throats, in late summer and early fall. Z8–10

***G. psittacinus*.** See *G. dalenii*.

***G.* 'Purple Flora'** (illus. p.384). Grandiflorus Group, large-flowered gladiolus. H 3ft (1m), S 6in (15cm). Produces spikes of rich deep purple flowers, with paler lilac markings, in midsummer. Z8–10

***G. purpureoauratus*.** See *G. papilio* Purpureoauratus Group.

***G.* 'Rose Supreme'.** Grandiflorus Group, giant-flowered gladiolus. H 5½ft (1.7m), S 10–12in (25–30cm). Spikes of up to 24 rose-pink flowers, flecked and streaked darker pink toward petal tips, and with cream throats, are produced in late summer. Z8–10

***G.* 'Royal Dutch'.** Grandiflorus Group, large-flowered gladiolus. H 5½ft (1.7m),

S 10–12in (25–30cm). Bears spikes of up to 27 flowers, each pale lavender blending to a white throat, from late summer to early fall. Very good for exhibition. Z8–10
***G.* Sancerre** (illus. p.384). Grandiflorus Group, large-flowered gladiolus. H 4ft (1.2m), S 6in (15cm). Spikes of pure white flowers are borne in midsummer. Z8–10
G. segetum. See *G. italicus*.
***G.* 'Stella'** (illus. p.384). Grandiflorus Group, medium-flowered gladiolus. H 2ft (60cm), S 3in (8cm). Spikes of yellow flowers, with a star-shaped, dark red mark at the throat, open in midsummer. Z8–10
***G.* 'Tendresse'.** Grandiflorus Group, medium-flowered gladiolus. H 5ft (1.5m), S 8–10in (20–25cm). In late summer, has spikes of up to 28 slightly ruffled, dark pink flowers, with small, cream throats marked with longitudinal, faint rose-pink "spears." Z8–10
***G.* 'Tesoro'.** Grandiflorus Group, medium-flowered gladiolus. H 5ft (1.5m), S 8–10in (20–25 cm). Bears spikes of up to 26 silky flowers, slightly ruffled and glistening yellow, in early fall. Among the top exhibition gladioli. Z8–10
***G.* 'The Bride'**, syn, *G.* x *colvillii* 'The Bride' (illus. p.384). Nanus Group gladiolus. H 32in (80cm), S 3–4in (8–10cm). In early summer, bears spikes of up to 7 white flowers, with green-marked throats. Z8–10
***G.* 'Tinkerbelle'.** Nanus Group gladiolus. H 24–28in (60–70cm), S to 6in (15cm). In summer, produces flower spikes with up to 15 orange flowers, with light yellow and orange throats. Z8–10
***G.* 'Trader Horn'** Grandiflorus Group, large-flowered gladiolus. H 4ft (1.2m), S 6in (15cm). Tall spikes of scarlet flowers, with a white mark on the throat, are produced in midsummer. Z8–10
***G.* 'Velvet Eyes'** (illus. p.384). Grandiflorus Group, large-flowered gladiolus. H 4ft (1.2m), S 6in (15cm). Produces spikes of dark bluish-purple flowers, with reddish-purple throats, in midsummer. Z8–10
***G.* 'Victor Borge'.** Grandiflorus Group, large-flowered gladiolus. H 5½ft (1.7m), S 14in (35cm). Spikes of up to 22 vermilion-orange flowers, with pale cream throat marks, are produced in late summer. Z8–10
***G.* 'White Prosperity'** (illus. p.384). Grandiflorus Group, large-flowered gladiolus. H 4ft (1.2m), S 6in (15cm). Spikes of pure white flowers, with ruffled petals, are borne in midsummer. Z8–10
***G.* 'Wine and Roses'** (illus. p.384). Grandiflorus Group, large-flowered gladiolus. H 4ft (1.2m), S 6in (15cm). Spikes of soft pink flowers, with burgundy-red throats, are produced in midsummer. Z8–10
***G.* 'Zorro'** (illus. p.384). Grandiflorus Group, large-flowered gladiolus. H 3–4ft (1–1.2m), S 6in (15cm). Produces up to 15 velvety, deep dark red flowers on spikes from mid- to late summer. Z8–10

Glandulicactus uncinatus. See *Sclerocactus uncinatus*.

GLANDULARIA

VERBENACEAE

Genus of summer- and fall-flowering evergreen perennials, often treated as annuals. Grow in a position in sun and in well-drained soil. Propagate by stem cuttings in late summer and fall or by layering or seed sown in fall or spring.
G.* x *hybrida, syn. *Verbena* x *hortensis*, *V.* x *hybrida*. **Derby Series** are erect, bushy perennials, grown as annuals. H 10in (25cm), S 1ft (30cm). Produce ovate, serrated, mid- to deep green leaves Clusters of small, tubular, lobed flowers, in a wide color range, including red, pink, blue, mauve and white, are borne in summer and early fall. **Enchantment Series** are trailing, producing white, pink, purple, or red flowers, some with white eyes. **Obsession Series** cultivars, H and S 6–8in (15–20cm), are compact and bear abundant, white, pink, purple, red, or blue flowers, sometimes with contrasting eyes. **'Peaches and Cream'** is spreading and branching, and produces pastel orange-pink flowers, maturing to apricot-yellow, and eventually creamy-yellow. Cultivars of **'Quartz Mix'** are compact and bushy with lance-shaped, leaves, and rounded heads of pink, red, maroon or purple flowers with white "eyes." **Quartz XP Series** cultivars are mound-forming and partly spreading, with domed flower heads in hues including blue, burgundy, and deep pink to silvery-pink, scarlet, and white, often with prominent, white eyes. **'Red Star'** bears white flowers marked with bright red. Mound-forming, well-branched **Sparkle Series** cultivars have bi- or tri-colored flowers, combining white with shades of pink, purple-blue, lavender-blue, dark violet, or red. Cultivars of **Voodoo Series** are upright to semitrailing. Flower petals are boldly marked with pink, red, or lavender-blue, creating a starlike effect. Z9–11
G. peruviana, syn. *Verbena chamaedrifolia*, *V. chamaedrioides*. Semievergreen, prostrate perennial. H to 3in (8cm), S 3ft (1m). Heads of small, tubular, brilliant scarlet flowers, with spreading petal lobes, are produced from early summer to early fall. Ovate, toothed leaves are mid-green. Prefers to grow in dry soil that is not too rich. Z9–11
***G.* 'Sissinghurst'**, syn. *Verbena* 'Sissinghurst', illus. p.268.

GLAUCIDIUM

RANUNCULACEAE

Genus of one species of spring-flowering perennial. Excellent in woodland gardens. Needs a partially shaded, sheltered position and moist, peaty soil. Propagate by seed in fall.
G. palmatum illus. p.260.

GLAUCIUM

Horned poppy

PAPAVERACEAE

Genus of annuals, biennials and short-lived perennials, grown for their bright, poppylike flowers. Grow in sun and in fertile, well-drained soil. Propagate annuals by seed outdoors in spring; perennials by seed outdoors in spring or fall; biennials by seed under glass in late spring or early summer. ⓘ Roots are toxic if ingested.
G. flavum (Horned poppy) illus. p.320.

GLEBIONIS

SYN. XANTHOPHTHALMUM

ASTERACEAE/COMPOSITAE

Genus of annuals, grown for their daisylike flower heads. Prefers full sun and well-drained soil. Propagate by seed in spring.
G. coronaria, syn. *Chrysanthemum coronarium*, *Xanthophthalmum coronarium*. Fast-growing, upright, branching annual. H 1–3ft (30cm–90cm), S 15in (38cm). Has feathery, divided, light green leaves. In summer bears single or semidouble, daisylike, yellow or yellow-and-white flower heads, to 2in (5cm) across. Z5–9
G. segetum, syn. *Chrysanthemum segetum*, *Xanthophthalmum segetum*, illus. p.322.

GLECHOMA

Ground ivy

LAMIACEAE/LABIATAE

Genus of evergreen, summer-flowering perennials. Good groundcover, but may be invasive. Tolerates sun or shade. Prefers moist but well-drained soil. Propagate by division in spring or fall or by softwood cuttings in spring.
G. hederacea (Ground ivy).
'Variegata' illus. p.277.

GLEDITSIA

CAESALPINIACEAE/LEGUMINOSAE

Genus of deciduous, usually spiny trees, grown for their foliage. Has inconspicuous flowers, often followed by large seed pods after hot summers. Young plants may suffer frost damage. Requires plenty of sun and fertile, well-drained soil. Propagate species by seed in fall, selected forms by budding in late summer.
G. capsica. See *G. caspica*.
G. caspica, syn. *G. capsica* (Caspian locust). Deciduous, spreading tree. H 40ft (12m), S 30ft (10m). Trunk is armed with long, branched spines. Has fernlike, glossy, mid-green leaves. Z7–10
G. triacanthos (Honey locust). Deciduous, spreading tree. H 70ft (20m), S 50ft (15m). Trunk is very thorny. Fernlike, glossy, dark green leaves turn yellow in fall. Z3–7.
f. *inermis* is thornless. **f. *inermis* 'Sunburst'** illus. p.72.

GLOBBA

ZINGIBERACEAE

Genus of rhizomatous, clump-forming perennials, grown for their flowers. Frost tender. Needs partial shade, high humidity and humus-rich, well-drained soil. Keep plants dry when dormant in winter. Propagate by division or seed in spring or by mature bulbils that fall off plants. See also feature panel p.477.
G. platystachya. Clump-forming perennial. H and S 3ft (1m). Has lance-shaped, silver-patterned, mid-green leaves, to 1ft (30cm) long. Pendent racemes of small, tubular, golden-yellow flowers are borne at the shoot tips along with bulbils in late summer. Z13–15 (min. 59°F/15°C)
G. winitii (illus. p.477). Clump-forming perennial. H 3ft (1m), S 1ft (30cm). Has lance-shaped leaves to 8in (20cm) long. Intermittently bears pendent sprays of tubular, yellow flowers with large, reddish-purple, reflexed bracts. Z12 (min. 64°F/18°C)

GLOBULARIA

Globe daisy

PLANTAGINACEAE/GLOBULARIACEAE

Genus of mainly evergreen perennials and subshrubs, grown for their dome-shaped hummocks and usually blue or purple flower heads. Needs full sun and well-drained soil. Propagate by division in spring, softwood or semiripe cuttings in summer or by seed in fall.
G. bellidifolia. See *G. meridionalis*.
G. cordifolia illus. p.369. **subsp. *bellidifolia*** see *G. meridionalis*.
subsp. *meridionalis* see *G. meridionalis*.
G. meridionalis, syn. *G. bellidifolia*, *G. cordifolia* subsp. *bellidifolia*, *G. cordifolia* subsp. *meridionalis*, *G. pygmaea*, illus. p.367.
G. pygmaea. See *G. meridionalis*.

GLORIOSA

Glory lily

COLCHICACEAE/LILIACEAE

Genus of one species of deciduous, perennial, summer-flowering, tendril climber with fingerlike tubers. Frost tender. Needs full sun and well-drained, rich soil. Water freely in summer and liquid feed every 2 weeks. Provide support. Dry off tubers in winter and keep cool but frost-free. Propagate by seed or division in spring. ⓘ Highly toxic if ingested; handling tubers may irritate the skin.
G. carsonii. See *G. superba*.
G. minor. See *G. superba*.
G. modesta, syn. *Littonia modesta*, illus. p.395.
G. rothschildiana. See *G. superba* 'Rothschildiana'.
G. simplex. See *G. superba*.
G. superba, syn. *G. carsonii*, *G. minor*, *G. simplex*. Deciduous, tendril climber. H to 6ft (2m), S 1–1½ft (30–45cm). Slender stems bear scattered, broadly lance-shaped leaves. In summer, upper leaf axils produce large, yellow or red flowers, with 6 sharply reflexed, wavy-edged petals, changing to dark orange or deep red. Stamens are prominent. Z8–10 (min. 46–50°F/8–10°C)
'Rothschildiana' (syn. *G. rothschildiana)* illus. p.386.

GLOTTIPHYLLUM

AIZOACEAE

Genus of clump-forming, low-growing, branching, perennial succulents with semicylindrical leaves often broader at tips. Frost tender. Grow in full sun and poor, well-drained soil. Propagate by seed or stem cuttings in spring or summer.
G. difforme, syn. *G. semicylindricum*. Clump-forming, perennial succulent. H 3in (8cm), S 1ft (30cm) or more. Has semicylindrical, bright green leaves, 2½in (6cm) long, with a tooth halfway along each margin. Short-stemmed, daisylike, golden-yellow flowers, 1½in (4cm) across, are borne in spring–summer. Z10-11
G. nelii illus. p.495.
G. semicylindricum. See *G. difforme*.

GLOXINIA
GESNERIACEAE

Genus of rhizomatous perennials or shrubs. Frost tender. Needs partial shade and humus-rich, well-drained soil. Dies down in late fall or winter; then keep rhizomes nearly dry. Propagate by division or seed in spring, or by stem or leaf cuttings in summer.
G. perennis. Late summer- to fall-flowering rhizome. H to 2ft (60cm), S 12–14in (30–35cm). Has heart-shaped, toothed, hairy leaves on spotted stems and bell-shaped, lavender-blue flowers, with rounded lobes and purple-blotched throats. Z13–15 (min. 50°F/10°C)
G. speciosa. See *Sinningia speciosa*.
G. tubiflora. See *Sinningia tubiflora*.

GLYCERIA
POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
***G. aquatica* 'Variegata'.** See *G. maxima* var. *variegata*.
***G. maxima* 'Variegata'.** See *G. maxima* var. *variegata*.
G. maxima* var. *variegata, syn. *G. aquatica* 'Variegata', *G. maxima* 'Variegata', illus. p.436.

GLYCYRRHIZA
PAPILIONACEAE/LEGUMINOSAE

Genus of summer-flowering perennials grown for their spikes of pealike blooms. The roots of *G. glabra* are the source of liquorice. Needs sun and deep, rich, well-drained soil. Suitable for a wild garden or informal border. Propagate by division in spring, or by seed in fall or spring.
G. glabra, syn. *G. glandulifera* (Liquorice, Sweetwood). Upright, tap-rooted perennial. H 4ft (1.2m), S 3ft (1m). Large, sticky leaves are divided into ovate leaflets. Short spikes of pealike, purple-blue and white flowers are borne on erect stems in late summer. Z9–11
G. glandulifera. See *G. glabra*.

Godetia. See *Clarkia*.

GOEPPERTIA
SYN. CALATHEA
MARANTACEAE

Genus of evergreen, rhizomatous, clump-forming perennials, previously included in the genus *Calathea*, grown for their attractive, brightly colored and patterned foliage. Frost tender. Requires partial shade and a humid position, without fluctuations of temperature, in moist, well-drained, humus-rich soil. Propagate by division in spring.
G. lindeniana, syn. *Calathea linendiana*. Evergreen, clump-forming perennial. H 3ft (1m), S 2ft (60cm). Lance-shaped, long-stalked, more or less upright leaves, over 1ft (30cm) long, are dark green, with paler green, feathered midribs above and marked with reddish-purple below. Intermittently produces short, erect spikes of 3-petaled, pale yellow flowers. Z14–15 (min. 61–70°F/16–21°C)
***G. majestica* 'Roseolineata'**, syn. *Calathea majestica* 'Roseolineata', *Calathea ornata* 'Roseolineata'. Evergreen, clump-forming, stemless perennial. H to 6ft (2m), S to 5ft (1.5m). Narrowly ovate, leathery leaves, to 2ft (60cm) long, are dark green, finely veined pink, and reddish-purple below. Intermittently bears short, erect spikes of 3-petaled, white to mauve flowers. Z14–15. (min. 61–70°F/16–21°C).
'Sanderiana' (syn. *Calathea ornata* 'Sanderiana', *G. sanderiana*) illus. p.472.
G. makoyana, syn. *Calathea makoyana*, (Peacock plant), illus. p.475.
G. sanderiana. See. *G. majestica* 'Sanderiana'.
G. zebrina, syn. *Calathea zebrina* (Zebra plant), illus. p.475.

GOMESA
ORCHIDACEAE

See also ORCHIDS.
G. flexuosa, syn. *Oncidium flexuosum* (Dancing-doll orchid; illus. p.467). Evergreen, epiphytic orchid for a cool or intermediate greenhouse. H 9in (23cm). In fall produces terminal sprays of many small, large-lipped, bright yellow flowers, ¼in (0.5cm) across, with red-brown markings on the sepals and petals. Bears narrowly ovate leaves, 4in (10cm) long. Best grown on a bark slab. Keep in semi-shade in summer. Z13–15 (min. 55°F/13°C)
G. planifolia. Evergreen, epiphytic orchid for a cool greenhouse. H 9in (23cm). Sprays of star-shaped, pea-green flowers, ¼in (0.5cm) across, are produced in fall. Narrowly ovate leaves are 6in (15cm) long. Grow in semishade during summer. Z14–15 (min. 55°F/13°C)

GOMPHOCARPUS
APOCYNACEAE/ASCLEPIADACEAE

Genus of evergreen and deciduous subshrubs and perennials. Hooded, cup-shaped flowers are followed by seed pods that are usually inflated. Grows in sun or partial shade and in any well-drained soil. Propagate by seed or softwood cuttings in spring. ⓘ Some species exude a milky sap, which may aggravate skin allergies.
G. physocarpus, syn. *Asclepias physocarpa* (Swan plant). Deciduous, erect, hairy subshrub. H to 6ft (2m), S to 2ft (60cm). Has lance-shaped leaves, 4in (10cm) long, and umbels of 5-horned, creamy-white flowers in summer, followed by large, inflated, globular seed pods with soft bristles. Z12–15

GOMPHRENA
AMARANTHACEAE

Genus of annuals, occasionally perennials. Only one species, *G. globosa*, is usually cultivated; its flower heads are good for cutting and drying. Grows best in sun and in fertile, well-drained soil. Propagate by seed sown under glass in spring.
G. globosa (Globe amaranth) illus. p.303.

Gordonia axillaris. See *Polyspora axillaris*.

GRAPTOPETALUM
CRASSULACEAE

Genus of rosetted, perennial succulents very similar to *Echeveria*, with which it hybridizes. Frost tender. Easy to grow, needing sun or partial shade and very well-drained soil. Propagate by seed or by stem or leaf cuttings in spring or summer.
***G. amethystinum*.** Clump-forming, prostrate, perennial succulent. H 16in (40cm), S 3ft (90cm). Thick, rounded, blue-gray to red leaves are 3in (7cm) long, in terminal rosettes. In spring–summer, bears star-shaped, yellow-and-red flowers, ½–¾in (1–2cm) across. Z13–15 (min. 50°F/10°C)
G. bellum, syn. *Tacitus bellus,* illus. p.485.
G. paraguayense (Mother-of-pearl plant) illus. p.489.

GRAPTOPHYLLUM
ACANTHACEAE

Genus of evergreen shrubs, grown mainly for their foliage. Frost tender. Needs partial shade and fertile, well-drained soil. Water potted plants freely when in full growth, less when temperatures are low. Young plants need tip pruning after flowering to promote branching; leggy specimens may be cut back hard after flowering or in spring. Propagate by greenwood or semiripe cuttings in spring or summer.
G. pictum (Caricature plant). Evergreen, erect, loose shrub. H to 6ft (2m), S 2ft (60cm) or more. Has ovate, pointed, glossy, green leaves with central, yellow blotches. Bears short, terminal spikes of tubular, red to purple flowers in spring and early summer. Z13–15 (min. 55°F/13°C)

GRASSES, BAMBOOS, RUSHES, AND SEDGES

Group of evergreen or herbaceous, perennial and annual grasses or grass-like plants belonging to the Gramineae (including Bambusoideae), Juncaceae and Cyperaceae families. They are grown mainly as foliage plants, adding grace and contrast to borders and rock gardens, although several grasses have attractive flower heads in summer that may be dried for winter decoration. Dead foliage may be cut back on herbaceous perennials when dormant. Propagate species by seed in spring or fall or by division in spring; selected forms by division only. Pests and diseases usually give little trouble. Grasses, bamboos, rushes and sedges are illustrated on pp.284–289.

Grasses (Gramineae)
Family of evergreen, semievergreen or herbaceous, sometimes creeping perennials, annuals and marginal water plants, usually with rhizomes or stolons, that form tufts, clumps or carpets. All have basal leaves and rounded flower stems that bear alternate, long, narrow leaves. Flowers are bisexual (males and females in same spikelet) and are arranged in panicles, racemes or spikes. Each flower head comprises spikelets, with one or more florets, that are covered with glumes (scales) from which awns (long, slender bristles) may grow. Unless otherwise stated, grasses will tolerate a range of light conditions and flourish in any well-drained soil. Many genera, such as *Briza*, self-seed readily.

See also *Alopecurus, Anemanthele, Arrhenatherum, Arundo, Bouteloua, Briza, Chionochloa, Coix, Cortaderia, Deschampsia, Festuca, Glyceria, Hakonechloa, Helictotrichon, Hordeum, Lagurus, Lamarckia, Leymus, Melica, Melinis, Milium, Miscanthus, Molinia, Oplismenus, Panicum, Pennisetum, Phalaris, Sesleria, Setaria, Spartina, Stenotaphrum, Stipa, Zea* and *Zizania*.

Bamboos (Bambusoideae)
Sub-family of Gramineae, comprising evergreen, rhizomatous perennials, sometimes grown as hedging as well as for ornamentation. Most bamboos differ from other perennial grasses in that they have woody stems (culms). These are hollow (except in *Chusquea*), mostly greenish-brown and, due to their silica content, very strong, with a circumference of up to 6in (15cm) in some tropical species. Leaves are lance-shaped with cross veins that give a tessellated appearance, which may be obscured in the more tender species. Flowers are produced at varying intervals but are not decorative. After flowering, stems die down, but few plants die completely. Bamboos thrive in a sheltered, not too dry site in sun or shade, unless otherwise stated.

See also *Bambusa, Chusquea, Fargesia, Himalayacalamus, Phyllostachys, Pleioblastus, Pseudosasa, Sasa, Semiarundinaria, Shibataea* and *Yushania*.

Rushes (Juncaceae)
Family of evergreen, tuft-forming or creeping, mostly rhizomatous annuals and perennials. All have either rounded, leafless stems or stems bearing long, narrow, basal leaves that are flat and hairless except *Luzula* (woodrushes) which has flat leaves, edged with white hairs. Rounded flower heads are generally unimportant. Most rushes prefer sun or partial shade and a moist or wet situation, but *Luzula* prefers drier conditions. See also *Isolepis, Juncus* and *Luzula*.

Sedges (Cyperaceae)
Family of evergreen, rhizomatous perennials that form dense tufts. Stems are triangular and bear long, narrow leaves, sometimes reduced to scales. Spikes or panicles of florets covered with glumes are produced and contain both male and female flowers, although some species of *Carex* have separate male and female flower heads on the same stem. Grow in sun or partial shade. Some sedges grow naturally in water, but many may be grown in any well-drained soil.

See also *Carex, Cyperus, Eleocharis, Schoenoplectus* and *Scirpoides*.

GREVILLEA
PROTEACEAE

Genus of evergreen shrubs and trees, grown for their flowers and foliage. Grow in full sun and well-drained, preferably acidic soil. Water potted specimens moderately, very little in winter. Pruning

is tolerated if necessary. Propagate by seed in spring or by semiripe cuttings in summer. ☤ All parts may aggravate skin allergies.
***G.* 'Canberra Gem'** illus. p.201.
G. juniperina* f. *sulfurea, syn. *G. sulfurea*, illus. p.206.
G. robusta (Silky oak). Fast-growing, evergreen, upright to conical tree. H 100ft (30m), S to 50ft (15m). Fernlike leaves are 6–10in (15–25cm) long. Mature specimens bear upturned bell-shaped, bright yellow or orange flowers in dense, one-sided spikes, 4in (10cm) or more long, in spring–summer. Z10–11 (min. 41°F/5°C)
***G.* 'Robyn Gordon'.** Evergreen, sprawling shrub. H 3–5ft (1–1.5m), S 20–60in (50–150cm). Has leathery, dark green leaves and arching stems that bear racemes of crimson flowers with protruding, recurved styles from early spring to late summer. Z13–15
G. rosmarinifolia illus. p.203.
G. sulfurea. See *G. juniperina* f. *sulfurea*.

GREYIA

MELIANTHACEAE/GREYACEAE

Genus of evergreen, spring-flowering shrubs or small trees, grown for their flowers and overall appearance. Frost tender. Needs full light and well-drained soil. Water containerized specimens moderately, less when not in full growth. Remove or shorten flowered stems after flowering. Propagate by seed in spring or by semiripe cuttings in summer. Plants grown under glass need plenty of ventilation.
G. sutherlandii (Natal bottlebrush) illus. p.455.

GRINDELIA

Gum plant, Rosinweed, Tarweed

ASTERACEAE/COMPOSITAE

Genus of annuals, biennials, evergreen, often woody-based perennials and some subshrubs, grown for their flower heads. Where marginally hardy, grow in a warm, sheltered site. Requires sun and well-drained soil. Water potted specimens moderately, less when not in full growth. Remove spent flowering stems either as they die or in following spring. Propagate by seed in spring or by semiripe cuttings in late summer.
G. chiloensis, syn. G. *speciosa*, illus. p.161.
G. speciosa. See *G. chiloensis*.

GRISELINIA

GRISELINIACEAE

Genus of evergreen shrubs and trees, with inconspicuous flowers, grown for their foliage. Thrives in mild, coastal areas where it is effective as a hedge or windbreak as it is very wind- and salt-resistant. Requires sun and fertile, well-drained soil. Restrict growth and trim hedges in early summer. Propagate by semiripe cuttings in summer.
G. littoralis (Broadleaf). Fast-growing, evergreen, upright shrub of dense habit. H 20ft (6m), S 15ft (5m). Has ovate, leathery leaves that are bright apple-green. Tiny, inconspicuous, yellow-green flowers are borne in late spring. Z7–9. **'Dixon's Cream'**, H 10ft (3m), S 6ft (2m), is slower-growing and has central, creamy-white leaf variegation. **'Variegata'** illus. p.119.

GUARIANTHE

ORCHIDACEAE

See also ORCHIDS.
G. bowringiana, syn. *Cattleya bowringiana* (illus. p.466). Evergreen, epiphytic or terrestrial orchid for a cool greenhouse. H 18in (45cm). In fall bears large heads of rose-purple-lipped, magenta flowers, 3in (8cm) across. Has ovate, stiff leaves, 3–4in (8–10cm) long. Grow in semishade during summer and do not spray from overhead. Z12–15 (min. 41°F/5°C, max. 86°F/30°C)

GUNNERA

GUNNERACEAE

Genus of summer-flowering, rhizomatous perennials, some evergreen, grown mainly for their foliage. Some are clump-forming with very large leaves; others are mat-forming with smaller leaves. Shelter from wind in summer; where marginally hardy, cover with garden compost in winter. Some require sun while others do best in partial shade; all need moist soil. Propagate by seed in fall or spring; small species by division in spring.
G. chilensis. See *G. tinctoria*.
G. magellanica illus. p.371.
G. manicata of gardens, illus. p.443.
G. scabra. See *G. tinctoria*.
G. tinctoria, syn. *G. chilensis, G. scabra*. Robust, rounded, clump-forming perennial. H and S 5ft (1.5m) or more. Has very large, rounded, puckered and lobed leaves, 1½–2ft (45–60cm) across. In early summer, bears dense, conical clusters of tiny, dull reddish-green flowers. May be invasive. Z9–10

GUZMANIA

BROMELIACEAE

Genus of evergreen, almost stemless, rosette-forming, mainly epiphytic perennials, grown for their overall appearance. Frost tender. Needs semishade and a rooting medium of equal parts humus-rich soil and either sphagnum moss, or bark or plastic chips used for orchid culture. Water moderately with soft water during growing season, sparingly at other times, and keep rosette centers filled with water from spring to fall. Propagate by offsets in spring or summer.
G. lingulata. Evergreen, basal-rosetted, epiphytic perennial. H and S 12–18in (30–45cm). Forms loose rosettes of broadly strap-shaped, arching, mid-green leaves. Bears a cluster of tubular, white to yellow flowers, surrounded by a rosette of bright red, orange or pink bracts, in summer. Z14–15. (min. 59°F/15°C) **var. *minor***, H and S 6in (15cm), has yellow-green leaves and bright red bracts.
G. monostachia, syn. *G. monostachya, G. tricolor*. Evergreen, basal-rosetted, epiphytic perennial. H and S 12–16in (30–40cm). Has dense rosettes of strap-shaped, erect to arching, pale to yellowish-green leaves. In summer, elongated spikes of tubular, white flowers emerge from axils of ovate bracts, the upper ones red, the lower ones green with purple-brown stripes. Z14–15 (min. 59°F/15°C)
G. monostachya. See *G. monostachia*.
G. sanguinea. Evergreen, basal-rosetted, epiphytic perennial. H 8in (20cm), S 12–14in (30–35cm). Has dense, slightly flat rosettes of broadly strap-shaped, arching, mid- to deep green leaves. In summer, a compact cluster of tubular, yellow flowers, encircled by red bracts, develops at the heart of each mature rosette. Z14–15 (min. 59°F/15°C)
G. tricolor. See *G. monostachia*.
G. vittata. Evergreen, basal-rosetted, epiphytic perennial. H and S 14–24in (35–60cm). Produces fairly loose rosettes of strap-shaped, erect, dark green leaves with pale green cross-bands and recurved tips. Stem bears a compact, egg-shaped head of small, tubular, white flowers in summer. Z14–15 (min. 59°F/15°C)

GYMNOCALYCIUM

CACTACEAE

Genus of spherical to cylindrical, perennial cacti producing abundant, funnel-shaped flowers in spring–summer. Crowns generally bear smooth, scaly buds. Frost tender. Needs full sun or partial shade and very well-drained soil. Propagate by seed or offsets in spring or summer.
G. andreae. Clump-forming, spherical, perennial cactus. H 2½in (6cm), S 4in (10cm). Has a glossy, dark green stem bearing 8 rounded ribs and 7 pale yellow-white spines per areole. Yellow flowers, 2in (5cm) across, are borne in spring and summer. Z11–12 (min. 41°F/5°C)
G. gibbosum illus. p.481.
***G. mihanovichii* 'Red Head'**, syn. *G.m* 'Hibotan', *G.m.* 'Red Cap', illus. p.487.
G. quehlianum. Flattened spherical, perennial cactus. H 2in (5cm), S 3in (7cm). Gray-blue to brown stem has 11 or so rounded ribs. Areoles each produce 5 curved spines. Has white flowers, 2in (5cm) across, with red throats, in spring–summer. Easy to flower. Z13–15 (min. 41°F/5°C)
G. schickendantzii. Flattened spherical, perennial cactus. H and S 4in (10cm). Dark green stem has 7–14 deeply indented ribs and long, red-tipped, gray-brown spines. Bears white to red flowers, 2in (5cm) across, in summer. Z13–15

GYMNOCARPIUM

WOODSIACEAE/DRYOPTERIDACEAE

Genus of deciduous, rhizomatous, terrestrial ferns with triangular fronds, ideal for groundcover. Grow in deep shade and preferably neutral to acidic, leafy, moist soil. Propagate from spores when ripe, or divide in spring.
G. dryopteris (Oak fern). Deciduous fern. H 8in (20cm), S indefinite. Bears distinctive, divided fronds. Pinnae are triangular, with oblong to ovate, toothed and scalloped segments. Pale yellowish-green when young, the fronds darken to vivid rich green as they mature. Z4–8

GYMNOCLADUS

CAESALPINIACEAE/LEGUMINOSAE

Genus of deciduous trees, grown for their foliage. Requires full sun and deep, fertile, well-drained soil. Propagate by seed in fall.
G. dioica (Kentucky coffee tree) illus. p.67.

Gynandriris sisyrinchium. See *Moraea sisyrinchium*.

GYNURA

ASTERACEAE/COMPOSITAE

Genus of evergreen perennials, subshrubs and semiscrambling climbers, grown for their ornamental foliage or flower heads. Frost tender. Requires a lightly shaded position in summer and any fertile, well-drained soil. Water moderately throughout the year, less in cool conditions; do not overwater. Provide support for stems. Remove stem tips to encourage branching. Propagate by softwood or semiripe cuttings in spring or summer.
G. aurantiaca (Velvet plant) illus. p.462. **'Purple Passion'** is an erect, woody-based, soft-stemmed subshrub or semiscrambling climber. H 3–10ft (1–3m) or more. Stems and lance-shaped, lobed, serrated leaves are covered with velvety, purple hairs. Leaves are purple-green above, deep red-purple beneath. In winter, clusters of daisylike, orange-yellow flower heads are produced and these become purplish as they mature. Z14–15 (min. 55°F/13°C)

GYPSOPHILA

CARYOPHYLLACEAE

Genus of spring- to fall-flowering annuals and perennials, some evergreen or semievergreen. Needs sun. Will grow in dry, sandy and stony soils, but does best in deep, well-drained soil. Resents being disturbed. Cut back after flowering for a second flush of flowers. Propagate *G. paniculata* cultivars by grafting in winter; others by softwood cuttings in summer or by seed in fall or spring.
G. cerastioides illus. p.349.
G. elegans illus. p.299.
***G. paniculata* 'Bristol Fairy'** illus. p.231. **'Flamingo'** is a spreading, short-lived perennial. H 2–2½ft (60–75cm), S 3ft (1m). In summer, bears panicles of numerous, small, rounded, double, pale pink flowers on wiry, branching stems. Has small, linear, mid-green leaves. Z5–9
G. repens. Semievergreen, prostrate perennial with much-branched rhizomes. H 1–2in (2.5–5cm) or more, S 1ft (30cm) or more. In summer, produces sprays of small, rounded, white, lilac or pink flowers on slender stems with narrowly ovate, bluish-green leaves. Excellent for a rock garden, wall or dry bank. May also be propagated by division in spring. Z4–7. **'Dorothy Teacher'** illus. p.362.
***G.* 'Rosenschleier'**, syn. *G.* 'Rosy Veil'. Vigorous, dense, mound-forming, semievergreen perennial. H 16–20in (40–50cm), S 3ft (1m). Branching stems produce linear to lance-shaped, bluish-green leaves. In mid- and late summer, bears wide, dense clouds of double flowers, in many, loose sprays, opening white and becoming very pale pink. Z5–9
***G.* 'Rosy Veil'.** See *G.* 'Rosenschleier'.

H

HAAGEOCEREUS

CACTACEAE

Genus of shrubby or treelike, columnar, solitary or clump-forming, perennial cacti with ribbed, densely spiny, columnar, green stems branching from the base. Requires full sun and very well-drained soil. Propagate by seed or stem cuttings in spring or summer.

***H. decumbens*.** Semiprostrate, perennial cactus. H 1ft (30cm), S 3ft (1m). Stems, 2½in (6cm) across, with 15–22 ribs, have dark red, central spines, 2in (5cm) long, and shorter, dense, golden, radial spines. Tubular, white flowers, 3in (8cm) across, are produced in summer near crowns, on mature plants. Z13–15 (min. 52°F/11°C)

***H. pseudomelanostele*.** Upright, perennial cactus. H 5ft (1.5m), S 3ft (1m). Green stem, 4in (10cm) across, with 19 or so ribs, bears white, golden or red, central spines and shorter, dense, bristlelike, white, radial ones. Bears tubular, white, lilac-white or pinkish-red flowers, 3in (7cm) long, near the crown in summer. Z13–15 (min. 52°F/11°C)

***H. versicolor*.** Erect, clump-forming cactus. H to 6ft (2m), S 3ft (1m). Dense, radial spines, golden, red or brown, at times form colored bands around a longer, central spine up the green stem. In summer, produces long-tubed, white flowers near the crown. Z13–15 (min. 52°F/11°C)

HABENARIA

ORCHIDACEAE

See also ORCHIDS.

H. radiata, syn. *Pecteilis radiata* (Egret flower), illus. p.408.

***H. rhodocheila*.** Deciduous, terrestrial orchid. H 12in (30cm), S 8in (20cm). Has fleshy tubers and an erect stem bearing linear, dark green leaves. In summer, bears upright racemes of green flowers, each with a 3-lobed, scarlet, orange, or yellow lip. Z11–12 (min. 55°F/13°C, max. 86°F/30°C)

HABERLEA

GESNERIACEAE

Genus of evergreen, rosetted perennials, grown for their elegant sprays of flowers. Useful for a wall, rock garden, or alpine house. Needs partially shaded, moist soil. Resents disturbance to roots. Propagate by seed in spring or by leaf cuttings or offsets in early summer.

H. ferdinandi-coburgii, syn. *H. rhodopensis* var. *ferdinandi-coburgii*. Evergreen, dense, basal-rosetted perennial. H 4–6in (10–15cm), S 10in (25cm). Sometimes considered a cultivar rather than a distinct species. Has oblong, toothed, dark green leaves, hairy below, almost hairless above. Sprays of funnel-shaped, blue-violet flowers with white throats open on long stems in late spring and early summer. Z5–8

H. rhodopensis*.** Evergreen, dense, basal-rosetted perennial. H 6in (15cm), S 10in (25cm). Similar in appearance to *H. ferdinandi-coburgii*, but leaves are hairy on both surfaces. Z5–7. **var. *ferdinandi-coburgii see *H. ferdinandi-coburgii*. **'Virginalis'** illus. p.359.

HABRANTHUS

AMARYLLIDACEAE

Genus of summer- and fall-flowering bulbs, grown for their funnel-shaped flowers. Needs a sheltered, sunny site and fertile soil. Provide a good supply of moisture when in growth. Propagate by seed or offsets from winter to spring.

***H. andersonii*.** See *H. tubispathus*.

***H. brachyandrus*.** Summer-flowering bulb. H to 12in (30cm), S 2in (5cm). Long, linear, semierect, narrow leaves form a basal cluster. Each flower stem bears a semierect, widely funnel-shaped, pinkish-red flower, 3–4in (7–10cm) long. Z10–11

H. robustus, syn. *Zephyranthes robusta*, illus. p.426.

H. tubispathus, syn. *H. andersonii*, *Zephyranthes andersonii*. Summer-flowering bulb. H to 6in (15cm), S 1in (25cm). Has linear, semierect, basal leaves and a succession of flower stems each bearing solitary, 1–1½in (2.5–3.5cm) long, funnel-shaped flowers, yellow inside, copper-red outside. Z10–11

HACQUETIA

SYN. DONDIA

APIACEAE/UMBELLIFERAE

Genus of one species of clump-forming, rhizomatous perennial that creeps slowly, grown for its yellow or yellow-green flower heads borne on leafless plants in late winter and early spring. Good in rock gardens. Prefers shade and humus-rich, moist soil. Resents root disturbance. Propagate by division in spring, by seed when fresh in fall, or by root cuttings in winter.

H. epipactis, syn. *Dondia epipactis*, *Sanicula epipactis*, illus. p.356.

HAEMANTHUS

Blood lily

AMARYLLIDACEAE

Genus of bulbs, some evergreen, with dense heads of small, star-shaped, often brightly colored flowers, from summer to winter. Prefers full sun or partial shade and well-drained soil or sandy potting mix. Apply liquid fertilizer in the growing season. Leave undisturbed for as long as possible before replanting. Propagate by offsets or seed before the onset of growth in early spring. ☠ All parts may cause mild stomach upset if ingested; contact with the sap may irritate skin.

H. albiflos (Shaving brush plant, White paint brush). Evergreen, clump-forming bulb. H 8–12in (20–30cm), S 12in (30cm). Has pairs of broadly strap-shaped, mid-green leaves, with hairy margins and sometimes white spots. From fall to winter, sturdy stems bear brushlike heads of tiny, white flowers with long stamens. White to red fruits follow. Z13–15 (min. 41°F/5°C)

H. coccineus (Cape tulip) illus. p.423.

***H. katherinae*.** See *Scadoxus multiflorus* subsp. *katherinae*.

***H. magnificus*.** See *Scadoxus puniceus*.

***H. multiflorus*.** See *Scadoxus multiflorus*.

***H. natalensis*.** See *Scadoxus puniceus*.

***H. puniceus*.** See *Scadoxus puniceus*.

***H. sanguineus*.** Deciduous, summer- to fall-flowering bulb. H to 12in (30cm), S 6in (15cm). Bears 2 prostrate, ovate to oblong, rough, dark green leaves, hairy beneath. Dark red flower stems form before leaves and bear dense heads of up to 100 small, red or pink flowers, with prominent stamens, followed by cream to dark red fruit. Z13–15 (min. 41°F/5°C)

HAKEA

PROTEACEAE

Genus of evergreen shrubs and trees, grown for their often needlelike leaves and their flowers. Wind-resistant, except in cold areas. Requires full sun and fertile, well-drained soil. Water container-grown specimens moderately in growth, and sparingly in winter. Propagate by semiripe cuttings in summer or by seed in fall.

H. drupacea, syn. *H. suaveolens*. Evergreen, rounded shrub. H and S 6ft (2m) or more. Leaves are divided into cylindrical, needlelike leaflets or occasionally are undivided and lance-shaped. Short, dense clusters of small, fragrant, tubular, white flowers are produced from summer to winter. Z10–11

H. lissosperma, syn. *H. sericea* of gardens (Mountain hakea). Evergreen, upright, densely branched shrub or small tree of pinelike appearance. H 10–20ft (3–6m), S 3–12ft (1–4m). Has long, slender, sharply pointed, gray-green leaves and, in late spring and early summer, bears clusters of small, spidery, white flowers. Z10–11

H. sericea of gardens. See *H. lissosperma*.

***H. suaveolens*.** See *H. drupacea*.

HAKONECHLOA

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.

***H. macra*.** Mound-forming, perennial grass. H 14in (35cm), S 16in (40cm). Has arching, linear, bright green leaves, tinged red in fall. Bears needlelike, pale green spikelets in open panicles from late summer to midfall. Z5–9. **'Aureola'** illus. p.289.

HALESIA

Silver bell, Snowdrop tree

STYRACACEAE

Genus of deciduous, spring-flowering trees and shrubs, grown for their showy, pendent, bell-shaped flowers and curious, winged fruits. Needs a sunny, sheltered position. Prefers moist but well-drained, neutral to acidic soil. Propagate by softwood cuttings in summer or by seed in fall.

H. carolina of gardens. See *H. tetraptera*.

***H. monticola*.** See *H. tetraptera* Monticola Group.

***H. monticola* var. *vestita*.** See *H. tetraptera* Vestita Group.

H. tetraptera, syn. *H. carolina* of gardens. Deciduous, spreading tree or shrub. H 25ft (8m), S 30ft (10m). Ovate leaves are mid-green. Abundant, bell-shaped, white flowers, hanging from bare shoots, are produced in late spring, and are followed by 4-winged, green fruits. Z5–8. **Monticola Group** (syn. *H. monticola*, *H. tetraptera* var. *monticola*; Silver bell, Snowdrop tree) illus. p.71. **Vestita Group** (syn. *H. monticola* var. *vestita)* bear larger white or pink-tinged flowers, to 1¼in (3cm) across. Leaves are downy beneath at first, becoming hairless later.

x HALIMIOCISTUS

CISTACEAE

Hybrid genus (*Cistus* x *Halimium*) of evergreen shrubs, grown for their flowers. Needs full sun and well-drained soil. Propagate by semiripe cuttings in summer.

x *H. sahucii*, syn. *Cistus revolii* of gardens, illus. p.149.

x *H. wintonensis*, syn. *Cistus wintonensis*, *Halimium wintonense*. Evergreen, bushy shrub. H 2ft (60cm), S 3ft (90cm). Saucer-shaped, white flowers, each with deep red bands and a yellow center, open amid lance-shaped, gray-green leaves in late spring and early summer. Z7–9. **'Merrist Wood Cream'** bears creamy-yellow, red-banded flowers with yellow centers.

HALIMIUM

CISTACEAE

Genus of evergreen shrubs, sometimes combined with the genus *Cistus*, grown for their showy flowers. Good for coastal gardens. Does best in full sun and light, well-drained soil. Propagate by semiripe cuttings in summer.

***H. formosum*.** See *H. lasianthum* subsp. *formosum*.

H. lasianthum*.** Evergreen, bushy, spreading shrub. H 3ft (1m), S 5ft (1.5m). Leaves are ovate and gray-green. In late spring and early summer, bears saucer-shaped, golden-yellow flowers, sometimes with small, central, red blotches. Z9–11. **'Concolor'** is free-flowering and without blotches. **subsp. *formosum (syn. *H. formosum*) illus. p.161. **subsp. *formosum* 'Sandling'** is low-growing, with bold, brownish-red marks at the bases of the petals.

H. ocymoides, syn. *Cistus algarvensis*. Evergreen, bushy shrub. H 2ft (60cm), S 3ft (1m). Narrowly ovate leaves, covered in white hairs when young, mature to dark green. In early summer, bears upright clusters of saucer-shaped, golden-yellow flowers, conspicuously blotched with black or purple. Z9–11. **'Susan'** see *H.* 'Susan'.

***H.* 'Susan'**, syn. *H. ocymoides* 'Susan', illus. p.160.

***H. wintonense*.** See x *Halimiocistus wintonensis*.

HAMAMELIS

Witch hazel

HAMAMELIDACEAE

Genus of deciduous, fall- to early-spring-flowering shrubs, grown for their fall color and fragrant, frost-resistant flowers, each with 4 narrowly strap-shaped petals. Flourishes in sun or semishade and fertile,

well-drained, peaty, acidic soil. Propagate species by seed in fall, selected forms by softwood cuttings in summer, by budding in late summer, or by grafting in winter. See also feature panel p.118.
***H.* x *intermedia* 'Angelly'.** Deciduous, upright, slow-growing shrub. H and S 12ft (4m) or more. Has ovate, bright green leaves that turn yellow in fall. Produces fragrant, large, bright citrus-yellow flowers in late winter. Z5–9. **'Aphrodite'** (illus. p.118) bears abundant large, fragrant, spidery, golden-orange flowers, along bare branches, in winter. **'Arnold Promise'** (illus. p.118) has a spreading habit and yellow flowers in mid- and late winter. **'Aurora'** has very large, sweetly scented, straw-yellow and light red flowers with purplish-red calyces, and orange- and red-tinted fall foliage. **'Barmstedt Gold'** (illus. p.118) is vigorous, with strongly scented, deep golden-yellow flowers, with red-tinted bases. **'Diane'** has deep red flowers from mid- to late winter. Leaves turn yellow and red in fall. **'Harry'** is free-flowering, with large, pale tawny-orange flowers in midwinter. **'Jelena'** (illus. p.118) has coppery-orange flowers from early to midwinter and bright orange or red fall leaves. **'Pallida'** (syn. *H. mollis* 'Pallida'; illus. p.118), S 10ft (3m), has dense clusters of large, sulfur-yellow flowers. **'Primavera'** (illus. p.118) has yellow flowers in late winter and early spring. **'Robert'** (illus. p.118) bears abundant, orange-red flowers. **'Rubin'** has medium-sized, clear red flowers, with twisted and crimped petals and purple and red calyces. **'Vesna'** produces golden-yellow flowers flushed with red.
H. japonica (Japanese witch hazel). Deciduous, upright, open shrub. H and S 12ft (4m). Broadly ovate, glossy, mid-green leaves turn yellow in fall. Fragrant, yellow flowers, with crinkled petals, are produced on bare branches from mid- to late winter. Z5–9. **'Zuccariniana'** produces paler, lemon-yellow flowers in early spring and has leaves that turn orange-yellow in fall.
H. mollis (Chinese witch hazel). Deciduous, upright, open shrub. H and S 12ft (4m) or more. Broadly ovate, mid-green leaves turn yellow in fall. Produces highly fragrant, spidery, yellow flowers, along bare branches, in mid- and late winter. Z5–9. **'Coombe Wood'** has golden-yellow flowers. **'Jermyns Gold'** has large clusters of broad-petaled, long-lasting, bright yellow flowers.
'Pallida' see *H.* x *intermedia* 'Pallida'.
***H. vernalis* 'Sandra'.** Deciduous, upright, open shrub. H and S 15ft (5m). Ovate leaves are purple when young, mid-green in summer, and purple, red, orange, and yellow in fall. Produces small, fragrant, spidery, deep yellow blooms in late winter and early spring. Z4–8
H. virginiana (Common witch hazel). Deciduous, open, upright shrub. H and S 12ft (4m). Has broadly ovate leaves that turn yellow in fall. Small, fragrant, spidery, yellow flowers, with 4 narrow petals, are produced in fall as leaves drop. Z3–8

***Hamatocactus hamatacanthus*.** See *Ferocactus hamatacanthus*.

***Hamatocactus setispinus*.** See *Thelocactus setispinus*.
***Hamatocactus uncinatus*.** See *Sclerocactus uncinatus*.

HARDENBERGIA

Coral pea

PAPILIONACEAE/LEGUMINOSAE

Genus of evergreen, woody-stemmed, twining or trailing climbers, grown for their curtains of leaves and racemes of pealike flowers. Grows best in sun and in well-drained soil that does not dry out. Propagate by stem cuttings in late summer or fall or by seed (soaked before sowing) in spring.
H. comptoniana illus. p.194.
***H. monophylla*.** See *H. violacea*.
H. violacea, syn. *H. monophylla* (Purple coral pea). Evergreen, woody-stemmed, twining climber. H to 6ft (2m) or more. Narrowly ovate leaves are 1–5in (2.5–12cm) long. Violet, occasionally pink or white, flowers, with yellow blotches on upper petals, are borne from late winter to early summer. Brownish pods are borne in fall. Z12–15. **'Happy Wanderer'** illus. p.462.

HATIORA

SYN. RHIPSALIDOPSIS

CACTACEAE

Genus of perennial, epiphytic or terrestrial cacti with short, jointed, cylindrical stems, each swollen at one end like a bottle. Requires partial shade and very well-drained soil. Keep damp in summer; w ater a little in winter. Propagate by stem cuttings in spring or summer.
***H. clavata*.** See *Rhipsalis gaertneri*.
H. gaertneri, syn. *Rhipsalidopsis gaertneri* (Easter Cactus), illus. p.487.
H. rosea, syn. *Rhipsalidopsis rosea* (Easter Cactus), illus. p.485.
H. salicornioides, syn. *Rhipsalis salicornioides* (Drunkard's dream). Bushy, perennial, epiphytic cactus. H and S 16in (40cm). Has freely branching stems, 1¼in (3cm) long. Has joints with expanded tips and terminal, bell-shaped, golden-yellow flowers in spring. Z13–15 (min. 55°F/13°C)

HAWORTHIA

ASPHODELACEAE/LILIACEAE

Genus of basal-rosetted, clump-forming, perennial succulents with triangular to rounded, green leaves. Roots tend to wither in winter or during long periods of drought. Needs partial shade to stay green and grow quickly; if planted in full sun, turns red or orange and grows slowly. Requires very well-drained soil. Keep dry in winter. Propagate by seed or division from spring to fall. *Haworthia attenuata* and *H. fasciata* are sometimes included in the genus *Haworthiopsis*.
H. arachnoidea, syn. *H. setata*, illus. p.491.
H. attenuata illus. p.480.
***H.* x *cuspidata*.** Clump-forming, perennial succulent. H 2in (5cm), S 10in (25cm). Produces a basal rosette of smooth, rounded, fleshy, light green leaves covered with translucent marks. Bears tubular to bell-shaped, white flowers from spring to fall on long, slender stems. Z13–15
***H. fasciata*.** Very variable, slow-growing, clump-forming, perennial succulent. H 4in (10cm), S 12in (30cm). Has raised, white dots, mostly in bands, on undersides of triangular, slightly incurved leaves, to 3in (8cm) long, which are arranged in a basal rosette. Bears tubular to bell-shaped, white flowers, on long, slender stems, from spring to fall. Z12–15 (min. 41°F/5°C)
***H. setata*.** See *H. arachnoidea*.
H. truncata illus. p.492.

HEATHERS

ERICACEAE

Heathers (also known as heaths) are evergreen, woody-stemmed shrubs, grown for their flowers and foliage, both of which may provide year-round color. There are 3 genera: *Calluna*, *Daboecia*, and *Erica*. *Calluna* has one species, *C. vulgaris*, but contains a large number of cultivars that flower mainly from midsummer to late fall. *Daboecia* has 2 species, both of which flower in summer. The largest genus is *Erica*, which, although broadly divided into 2 groups—winter- and summer-flowering species—has some species also flowering in spring and fall. They vary in height from tree heaths, which may grow to 20ft (6m), to dwarf, prostrate plants that, if planted 12–18in (30–45cm) apart, soon spread to form a thick mat of groundcover. Heathers prefer an open, sunny position and require humus-rich, well-drained soil. *Calluna* and *Daboecia* dislike limestone and must be grown in acidic soil; some species of *Erica* tolerate slightly alkaline soil, but all are better grown in acidic soils. Prune lightly after flowering each year to keep plants bushy and compact. Propagate species by seed in spring or by softwood cuttings, division, or layering in summer. Seed cannot be relied on to come true. All cultivars should be vegetatively propagated. Heathers are illustrated on p.166.

HEBE

PLANTAGINACEAE/SCROPHULARIACEAE

Genus of evergreen shrubs, rarely trees, sometimes included in the genus *Veronica*, grown for their often dense panicles, racemes, or spikes of flowers and their foliage. Grows well in coastal areas. Smaller species and cultivars are suitable for rock gardens. Requires full sun and well-drained soil. Growth may be restricted, or leggy plants tidied up, by cutting back in spring. Propagate by semiripe cuttings in summer.
H. albicans illus. p.151.
***H.* 'Alicia Amherst'.** Evergreen, fast-growing upright shrub. H and S 4ft (1.2m). Has large, oblong, glossy, dark green leaves and, in late summer to fall, large spikes of small, 4-lobed, deep violet-purple flowers. Z9–10
***H.* 'Andersonii Argenteovariegata'.** See *H.* x *andersonii* 'Variegata'.
***H.* x *andersonii* 'Variegata'**, syn. *H.* 'Andersonii Argenteovariegata'. Evergreen, bushy shrub. H and S 6ft (2m). Oblong, dark green leaves have gray-green centers and creamy-white margins. Has dense spikes of small, 4-lobed, lilac flowers from midsummer to fall. Z10–11
***H.* 'Autumn Glory'** illus. p.157.
***H.* 'Blue Gem'**, syn. *H.* x *franciscana* 'Blue Gem', *H. latifolia*. Evergreen, spreading shrub. H and S 4½ft (1.3m). Has densely arranged, oblong, mid-green leaves. Bears dense spikes of small, 4-lobed, violet-blue flowers from midsummer until early winter. Z8–10
***H.* 'Bowles's Hybrid'**, syn. *H.* 'Bowles Variety', illus. p.157.
***H. brachysiphon*.** Evergreen, bushy, shrub. H and S 6ft (2m). Has oblong, dark green leaves and dense spikes of small, 4-lobed, white flowers in midsummer. Z8–10. **'White Gem'** see *H.* 'White Gem'.
***H. buchananii*.** Evergreen, dome-shaped shrub. H 8in (20cm), S 36in (90cm). Very dark stems bear ovate, bluish-green leaves. In summer, produces clusters of small, 4-lobed, white flowers at stem tips. Z8–10. **'Minor'**, H to 4in (10cm), S to 6in (15cm), has smaller leaves.
***H.* 'Carl Teschner'.** See *H.* 'Youngii'.
***H. carnosula*.** Evergreen, prostrate shrub. H 6–12in (15–30cm), S 12in (30cm) or more. Has small, oblong to ovate, slightly convex, fleshy, glaucous leaves. Terminal clusters of many small, white flowers, with 4 pointed lobes, are borne in late spring or early summer. Z9–10
H. cupressoides illus. p.165. **'Boughton Dome'** illus. p.347.
***H.* 'E.A. Bowles'** illus. p.157.
***H.* 'Eveline'**, syn. *H.* 'Gauntlettii'. Evergreen, upright shrub. H and S 3ft (1m). Has long spikes of small, 4-lobed, pink flowers, each with a purplish tube, amid rich green, oblong leaves from late summer to late fall. Z10–11
***H.* 'Fairfieldii'.** Evergreen, upright shrub. H and S 2ft (60cm). Ovate, toothed, glossy, bright green leaves are red-margined. Large, open panicles of small, 4-lobed, pale lilac flowers are produced in late spring and early summer. Z9–10
***H.* x *franciscana* 'Blue Gem'.** See *H.* 'Blue Gem'.
***H.* 'Gauntlettii'.** See *H.* 'Eveline'.
***H.* 'Great Orme'** illus. p.153.
***H. hulkeana*.** Evergreen, upright, open shrub. H and S 2ft (60cm). Ovate, toothed, glossy, dark green leaves have red margins. Bears abundant, small, 4-lobed, pale lilac flowers in large, open panicles in late spring and early summer. Z9–11
***H. latifolia*.** See *H.* 'Blue Gem'.
***H.* 'La Séduisante'.** See *H. speciosa* 'La Séduisante'.
***H. macrantha*.** Evergreen, bushy shrub. H 2ft (60cm), S 3ft (90cm). Has ovate, toothed, fleshy, bright green leaves and produces racemes of large, 4-lobed, pure white flowers in early summer. May become bare at the base. Z9–11
***H.* 'Midsummer Beauty'.** Evergreen, rounded, open shrub. H 6ft (2m), S 5ft (1.5m). Long, narrow, glossy, bright green leaves are reddish-purple beneath. Long spikes of small, 4-lobed, lilac flowers that fade to white are borne from midsummer to late fall. Z9–11
***H.* 'Mrs. Winder'**, syn. *H.* 'Waikiki', *H.* 'Warleyensis'. Compact, rounded evergreen shrub. H 3ft (1m), S 4ft (1.2m).

Has purplish-brown shoots and oblong to ovate, dark green leaves, dark red-purple when young, with brown-purple midribs. Bears medium-sized, violet-blue flowers in axillary racemes in late summer. Z9–11

***H.* 'Nicola's Blush'** illus. p.152.

***H. ochracea*.** Evergreen, bushy, dense shrub. H and S 3ft (1m). Slender shoots are densely covered with tiny, scalelike, ocher-tinged, olive-green leaves. Bears clusters of small, 4-lobed, white flowers in late spring and early summer. Z8–10. **'James Stirling'**, H 18in (45cm), S 2ft (60cm), has tiny, triangular, rich ocher-yellow leaves. Bears small to medium-sized, white flowers in late spring and early summer.

***H. pinguifolia* 'Pagei'** illus. p.337.

***H.* 'Purple Queen'** illus. p.157.

***H. rakaiensis*.** Evergreen, rounded, compact shrub. H 3ft (1m), S 4ft (1.2m). Bears small, dense spikes of 4-lobed, white flowers amid small, oblong, mid-green leaves from early to mid-summer. Z8–10

H. recurva illus. p.151.

***H.* 'Ruddigore'.** See *H. speciosa* 'La Séduisante'.

***H. salicifolia*.** Evergreen, upright shrub. H and S 8ft (2.5m). Has long, narrow, pointed, pale green leaves and, in summer, produces slender spikes of small, 4-lobed, white or pale lilac flowers. Z8–10

***H. speciosa* 'La Séduisante'**, syn. *H.* 'La Séduisante', *H.* 'Ruddigore', *H. speciosa* 'Ruddigore'. Evergreen, upright shrub. H and S 3ft (1m). Ovate, glossy, deep green leaves are purple beneath. Large spikes of small, dark purplish-red flowers are borne from late summer to late fall. Z9–11

***H. speciosa* 'Ruddigore'.** See *H. speciosa* 'La Séduisante'.

H. vernicosa illus. p.337.

***H.* 'Waikiki'.** See *H.* 'Mrs. Winder'.

***H.* 'Warleyensis'.** See *H.* 'Mrs. Winder'.

***H.* 'White Gem'**, syn. *H. brachysiphon* 'White Gem', illus. p.149.

***H.* 'Youngii'**, syn. *H.* 'Carl Teschner'. Evergreen, prostrate, becoming dome-shaped, shrub. H 8in (20cm), S 2ft (60cm). Blackish-brown stems are covered in small, elliptic to broadly ovate, glossy, dark green leaves. Bears short racemes of tiny, 4-lobed, white-throated, purple flowers in summer. Excellent border plant. Z8–9

HEDERA

Ivy

ARALIACEAE

Genus of evergreen, woody-stemmed, trailing or self-clinging climbers with adventitious rootlets, used for covering walls and fences and as groundcover. Takes a year or so to become established, but thereafter growth is rapid. On the ground and while climbing, mostly bears roughly triangular, usually lobed leaves. Given extra height and access to light, leaves become less lobed and, in fall, umbels of small, yellowish-green flowers are produced, followed by round, black, occasionally yellow, fruits. Ivies with green leaves are very shade tolerant and do well against a north-facing wall. Those with variegated or yellow leaves prefer more light, are usually less hardy, and may sustain frost and wind damage in severe winters. All prefer well-drained, alkaline soil. Prune in spring to control height and spread, and to remove any damaged growth. Propagate in late summer by softwood cuttings or rooted layers. Red spider mite may be a problem when plants are grown against a south-facing wall or in dry conditions. ⓘ All parts of ivy may cause severe discomfort if ingested; contact with sap may aggravate skin allergies or irritate skin.

H. algeriensis, syn *H. canariensis* of gardens. Fast-growing, evergreen, self-clinging climber. H 6ft (2m). Has ovate to triangular, unlobed, glossy, mid-green leaves and reddish-purple stems. Suitable for growing against a wall in a sheltered area. Z6–11. **'Gloire de Marengo'** has silver-variegated leaves. **'Ravensholst'**, H 15ft (5m), is vigorous with large leaves; good for groundcover.

H. canariensis of gardens, see *H. algeriensis*.

***H. cinerea*.** See *H. nepalensis*.

H. colchica (Bullock's heart ivy, Persian ivy). Evergreen, self-clinging climber or trailing perennial. H to 30ft (10m). Has large, ovate, unlobed, dark green leaves. Suitable for growing against a wall. Z6–11.

'Dentata' is more vigorous and has large, light green leaves. Good when grown against a wall or for groundcover.

'Dentata Variegata', H 15ft (5m), has variegated, cream-yellow leaves; useful to brighten a shady corner. **'Paddy's Pride'** see *H.c.* 'Sulphur Heart'. **'Sulphur Heart'** (syn. *H.c.* 'Paddy's Pride') illus. p.211.

H. helix (English ivy). Vigorous, evergreen, self-clinging climber or trailing perennial. H 30ft (10m). Has 5-lobed, dark green leaves. Provides good ground- and wall cover, but may be invasive; for a small garden, the more decorative cultivars are preferable. Z5–11. **'Adam'**, H 15ft (5m), has small, light green leaves variegated yellow; may suffer leaf damage in winter, but will recover. **'Angularis Aurea'** see *H. hibernica* 'Angularis Aurea'. **'Anne Borch'** see *H.h.* 'Anna Marie'. **'Anna Marie'** (syn. *H.h.* 'Anne Borch'), H 4ft (1.2m), has light green leaves with cream variegation, mostly at margins; may suffer leaf damage in winter. **'Atropurpurea'** (syn. *H.h.* 'Purpurea'; Purple-leaved ivy), H 25ft (8m), has dark green leaves that turn deep purple in winter. **'Buttercup'**, H 6ft (2m), has light green, 5-lobed leaves that turn rich butter-yellow in full sun. **'Caenwoodiana'** see *H.h.* 'Pedata'. **'Congesta'**, H 1½ft (45cm), is a non-climbing, erect cultivar with spirelike shoots and small leaves; suitable for a rock garden. **'Conglomerata'**, H 3ft (1m), will clamber over a low wall or grow in a rock garden; has small, curly, unlobed leaves. **'Cristata'** see *H.h.* 'Parsley Crested'. **'Curlylocks'** see *H.h.* 'Manda's Crested'. **'Deltoidea'** see *H. hibernica* 'Deltoidea'. **'Erecta'**, H 3ft (1m), is a non-climbing, erect cultivar similar to *H.h.* 'Congesta'. **'Eva'**, H 4ft (1.2m), has small, gray-green leaves with cream variegation; may suffer leaf damage in winter. **'Glacier'** illus. p.211. **'Glymii'** (syn. *H.h.* 'Scutifolia'), H 6ft (2m), has glossy, dark green leaves that turn deep purple in winter; not suitable for groundcover. **'Goldchild'** (syn. *H.h.* 'Gold Harald'), H 3ft (1m), has small, 3- to 5-lobed, gray-green leaves with broad yellow margins. **'Golden Ingot'**, H 3ft (1m), similar to 'Goldchild', but has more pointed leaf lobes. Z5–10. **'Gold Harald'** see *H.h.* 'Goldchild'. **'Goldheart'** see *H.h.* 'Oro di Bogliasco'. **'Green Ripple'**, H 6ft (2m), has mid-green leaves with prominent, light green veins; good for groundcover or for growing against a low wall. **'Hahn's Self-branching'** see *H.h.* 'Pittsburgh'. **'Heise'**, H 1ft (30cm), has small, gray-green leaves with cream variegation; suitable as groundcover for a small, sheltered area. **subsp. *hibernica*** see *H. hibernica*. **'Ivalace'** (syn. *H.h.* 'Mini Green'), H 3ft (1m), has curled and crimped, glossy leaves; good for groundcover and for growing against a low wall. **'Jubiläum Goldherz'** see *H.h.* 'Oro di Bogliasco'. **'Jubilee Goldheart'** see *H.h.* 'Oro di Bogliasco'. **'Königers Auslese'** (syn. *H.h.* 'Sagittifolia' of gardens), H 4ft (1.2m), has fingerlike, deeply cut leaves; not suitable for groundcover. **'Little Diamond'** is slow-growing and has unlobed, diamond-shaped, gray-green leaves, variegated creamy-white. **'Manda's Crested'** (syn. *H.h.* 'Curlylocks'), H 6ft (2m), has elegant, wavy-edged, mid-green leaves that turn a coppery shade in winter. **'Mini Green'** see *H.h.* 'Ivalace'. **'Oro di Bogliasco'** (syn. *H.h.* 'Goldheart', *H.h.* 'Jubiläum Goldherz', *H.h.* 'Jubilee Goldheart') illus. p.211. **'Parsley Crested'** (syn. *H.h.* 'Cristata'), H 6ft (2m), has light green leaves, crested at margins; not suitable for groundcover. **'Pedata'** (syn. *H.h.* 'Caenwoodiana'; Bird's-foot ivy), H 12ft (4m), has gray-green leaves shaped like a bird's foot; not suitable for groundcover. **'Pittsburgh'** (syn. *H.h.* 'Hahn's Self-branching'), H 3ft (1m), has mid-green leaves; suitable for growing against a low wall and for groundcover. **f. *poetarum*** (syn. *H.h.* 'Poetica Arborea'; Italian ivy, Poet's ivy), H 10ft (3m), slow-growing with large, 5-lobed, shiny, mid-green leaves. Often grown as a "bush ivy," it bears distinctive, orange-yellow fruits, even on comparatively young plants. **'Poetica Arborea'** see *H.h.* f. *poetarum*. **'Purpurea'** see *H.h.* 'Atropurpurea'. **'Sagittifolia'** of gardens see *H.h.* 'Königers Auslese'. **'Scutifolia'** see *H.h.* 'Glymii'. **'Shamrock'** (Clover-leaf ivy), H 3ft (1m), has small, 3-lobed, dark green leaves with wedge-shaped central lobes; lateral lobes are cut almost to the central veins. Use for topiary, a low wall, or a hanging basket. **'Spetchley'** see *H. hibernica* 'Spetchley'. **'Telecurl'**, H 3ft (1m), has elegantly twisted, light green leaves. **'Triton'**, H 1½ft (45cm), is a non-climbing cultivar that has leaves with deeply incised lobes that resemble whips; provides good groundcover. **'Woeneri'** see *H.* x *soroksarensis* 'Woeneri'.

H. hibernica, syn. *H. helix* subsp. *hibernica* (Irish ivy). Vigorous, evergreen climber. H 30ft (10m). Has large, mid-green leaves. Good for covering a large area, either on the ground or against a wall. Z6–11. **'Angularis Aurea'** (syn. *H. helix* 'Angularis Aurea'), H 12ft (4m), has glossy, light green leaves, with bright yellow variegation; not suitable as groundcover. **'Deltoidea'** (syn. *H. helix* 'Deltoidea'; Sweetheart ivy), H 15ft (5m), has heart-shaped leaves; suitable only for growing against a wall. **'Spetchley'** (syn. *H. helix* 'Spetchley'), H 6in (15cm), has variable, tiny, dark green leaves, usually 3-lobed, but often with a single lobe. Occasionally reverts to leaves similar to those of the species. Ideal for groundcover or as a houseplant.

***H. himalaica*.** See *H. nepalensis*.

H. nepalensis, syn. *H. cinerea*, *H. himalaica* (Nepal ivy). Evergreen, self-clinging climber. H 10ft (3m). Has ovate to triangular, toothed, olive-green leaves and is suitable only for growing against a sheltered wall. Young growth may suffer damage from late frost. Z8–11. **'Suzanne'**, H 6ft (2m), is less vigorous than the species and has 5-lobed leaves with backward-pointing basal lobes.

***H. pastuchovii*.** Moderately vigorous, evergreen, self-clinging climber. H 6ft (2m). Has shield-shaped, glossy, dark green leaves and should only be grown against a wall. Z6–11. **'Ann Ala'** has handsome, unlobed, dark blackish-green leaves.

H. rhombea (Japanese ivy). Evergreen, self-clinging climber. H 10ft (3m). Has small, fairly thick, diamond-shaped, unlobed, mid-green leaves. Suitable only for growing against a low wall. Z6–11. **'Variegata'** has leaves with narrow, white margins.

***H.* x *soroksarensis* 'Woeneri'**, syn. *H. helix* 'Woeneri'. Vigorous, evergreen, self-clinging climber. H 12ft (4m). Has bluntly lobed, gray-green leaves, with lighter colored veins, that turn purple in winter. Z4–9

HEDYCHIUM

SYN. BRACHYCHILUM

Garland flower, Ginger lily

ZINGIBERACEAE

Genus of perennials with sturdy, fleshy rhizomes. Fragrant, showy flowers are short-lived, but borne profusely. Grow in sheltered borders and conservatories. Requires a position in sun and in rich, moist soil. Propagate by division in spring; should not be divided when dormant. See also feature panel p.477.

H. coccineum (Red ginger lily, Scarlet ginger lily). Upright, rhizomatous perennial. H to 10ft (3m) S 3ft (1m). Has long-stalked, narrowly lance-shaped, grayish-green leaves. Bears spikes of short-lived, orange to red, pink or white flowers, each with a 2-lobed lip, in summer. Very variable, with many named forms. Z8–10. **'Tara'** see *H.* 'Tara'.

H. coronarium (Garland flower, White ginger lily). Upright, rhizomatous perennial. H to 10ft (3m), S 3ft (1m) or more. Lance-shaped, mid-green leaves are downy beneath. Produces dense spikes of very fragrant, butterfly-like, white flowers with basal, yellow blotches in midsummer. Z7–11 (min. 41°F/5°C)

H. densiflorum (illus. p.477). Clump-forming, rhizomatous perennial. H 15ft (5m), S 6ft (2m) or more. Broadly lance-shaped leaves are glossy, mid-green. Bears a profusion of short-lived, fragrant, orange or yellow flowers in dense spikes during late summer. Z8–11

H. flavescens. Upright, rhizomatous perennial. H 3–6ft (1–2m), S 3ft (1m). Lance-shaped, mid-green leaves are softly hairy. Produces spikes of short-lived, very fragrant, pale to lemon-yellow flowers, each with a 2-lobed lip, in late fall. Good in a tub. Z9–11

H. gardnerianum (Kalili ginger) illus. p.476.

H. gracile. Arching, rhizomatous perennial. H 4ft (1.2m), S 20in (50cm). In summer, thin stems bear short-lived, sometimes fragrant, white flowers, each with a narrow, 2-lobed lip, narrow sepals and red stamens. Has lance-shaped, mid-green leaves. Requires staking. Good in a raised container or on a bank. Z8–10

H. maximum (illus. p.477). Upright, rhizomatous perennial. H 6–10ft (2–3m), S 3ft (1m). Has large, thick-stems, bearing lance-shaped, mid-green leaves. Short-lived, fragrant, pale yellow flowers, with golden centers and 2-lobed lip, are produced in fall. Z8–11

***H.* x *moorei* 'Tara'.** See *H.* 'Tara'.

H. stenopetalum (illus. p.477). Upright, rhizomatous perennial. H 10–13ft (3–4m), S 3ft (1m) or more. Has very large, thick-stems bearing lance-shaped, deep green leaves that are hairy beneath. Short-lived, white flowers, each with a 2-lobed lip, are borne in a spike, to 18in (45cm) long, in late summer and fall. Prone to wind damage. Z9–11

***H.* 'Tara'**, syn. *H. coccineum* 'Tara', *H.* x *moorei* 'Tara', illus. p.220.

H. thyrsiforme (illus. p.477). Upright, rhizomatous perennial. H 3–6ft (1–2m), S 20in (50cm). Broadly lance-shaped leaves are dark green. Small, short-lived, white flowers, each with a 2-lobed lip and very long stamens, are borne in fall–winter. Flower spike is wider than it is tall, which distinguishes it from other species. Z8–11

H. yunnanense (illus. p.477). Upright, rhizomatous perennial. H 20–32in (50–80cm), S 12in (30cm). Has broadly lance-shaped, mid-green leaves. Short-lived, fragrant, cream and white flowers, each with a 2-lobed lip, are produced in summer. Z9–11

HEDYOTIS

Bluets

RUBIACEAE

Genus of mat-forming perennials, grown for their flowers, borne profusely in spring and summer. Thrives in a position in shade and on moist, sandy leaf mold. Propagate by division in spring or fall, or by seed in spring.

H. michauxii, syn. *Houstonia serpyllifolia* (Creeping bluets), illus. p.369.

HEDYSARUM

PAPILIONACEAE/LEGUMINOSAE

Genus of perennials and deciduous subshrubs, grown for their pealike flowers. Prefers a site in sun with well-drained soil. Roots resent disturbance. Propagate by seed in fall or spring.

H. coronarium (French honeysuckle) illus. p.235.

Heeria. See *Heterocentron*.

Heimerliodendron brunonianum. See *Pisonia umbellifera*.

HELENIUM

Helen's flower

ASTERACEAE/COMPOSITAE

Genus of late-summer- and fall-flowering annuals, biennials, and perennials, grown for their daisylike flower heads, each with a prominent, central disc. Needs a site in full sun and any well-drained soil. Propagate by division in spring or fall. ⓘ All parts may cause severe discomfort if ingested; contact with foliage may aggravate skin allergies. See also feature panel p.248.

***H.* 'Biedermeier'.** Clump-forming, erect, bushy perennial. H 4ft (1.2m), S 18in (45cm). Has lance-shaped, mid-green leaves. In late summer, erect stems bear sprays of yellow-tipped, red flower heads with a central, dark brown disc. The ray florets become reflexed with age. Z4–8

***H.* 'Blopip'.** See *H.* Pipsqueak ('Blopip').

***H.* 'Bressingham Gold'.** Erect, bushy perennial with sturdy stems clothed in lance-shaped, mid-green leaves. H 3ft (90cm), S 2ft (60cm). Sprays of bright yellow flower heads are produced in late summer and fall. Z4–8

***H.* 'Bruno'** (illus. p.248). Erect, bushy perennial. H 4ft (1.2m), S 2ft (60cm). Sturdy stems bear lance-shaped leaves. Sprays of deep bronze-red flower heads are borne in late summer and early fall. Z4–8

***H.* 'Butterpat'** (illus. p.248). Compact perennial. H 3ft (90cm), S 2ft (60cm). Has sturdy stems clothed in lance-shaped leaves. Bears sprays of rich deep yellow flower heads in late summer and fall. Z4–8

***H.* 'Coppelia'.** Clump-forming, erect, bushy perennial. H 3ft (90cm), S 2ft (60cm). Has lance-shaped, mid-green leaves. In mid- to late summer, bears sprays of deep reddish-orange flower heads, which fade with age, with central, brown discs. Z4–8

***H.* 'Double Trouble'** (illus. p.248). Clump-forming, erect, bushy perennial. H to 32in (80cm), S 18in (45cm). Has lance-shaped, mid-green leaves. In mid- to late summer, produces sprays of double, bright yellow flower heads with twin layers of ray florets, held horizontally. Z4–8

***H.* 'Dunkel Pracht'.** Clump-forming, erect, bushy perennial. H to 3ft (1m), S 18in (45cm). Has lance-shaped, mid-green leaves. In late summer, bears sprays of dark brown-red flower heads. Z4–8

***H.* 'Feuersiegel'** (illus. p.248). Clump-forming, erect, bushy perennial. H 5ft (1.5m), S 2ft (60cm). Has lance-shaped, mid-green leaves. In mid- to late summer, produces sprays of rich yellow flower heads with horizontally held ray florets, marked with an irregular, orange-red band, and central, soft brown discs. Z4–8

***H.* 'Indianersommer'** (illus. p.248). Clump-forming, erect, bushy perennial. H to 3ft (1m) or more, S 18in (45cm). Has lance-shaped, mid-green leaves. In mid- to late summer, bears sprays of dark brownish-red flower heads, aging to orange and yellow, and central, greenish-brown discs. Z4–8

***H.* 'Moerheim Beauty'** illus. p.254.

***H.* Pipsqueak ('Blopip').** Clump-forming, compact, bushy perennial. H to 2ft (60cm), S 1ft (30cm). Has lance-shaped, mid-green leaves. In mid- to late summer, has sprays of shuttlecock-shaped, yellow flower heads with short, reflexed ray florets and large, central, rich brown discs. Z4–8

***H.* 'Potter's Wheel'** (illus. p.248). Clump-forming, erect, bushy perennial. H to 32in (80cm), S 18in (45cm). Has lance-shaped, mid-green leaves. From midsummer to fall, bears sprays of dark red flower heads with gold-edged ray florets and central, brown discs. Z4–8

***H.* 'Red Army'** (illus. p.248). Clump-forming, erect, bushy perennial. H to 3ft (90cm), S 18in (45cm). Has lance-shaped, mid-green leaves. From midsummer to midfall, produces sprays of reddish-orange flower heads, intensifying in color as they age to dark red, with central, dark brown discs. Z4–8

***H.* 'Riverton Gem'.** Erect, bushy perennial. H 4ft (1.2m), S 2ft (60cm). Stems are clothed in lance-shaped leaves. Bears sprays of red-and-gold flower heads in late summer and early fall. Z4–8

***H.* 'Rubinzwerg'** (illus. p.248). Clump-forming, erect, bushy perennial. H 30in (75cm), S 2ft (60cm). Has lance-shaped, mid-green leaves. In midsummer, bears sprays of rich red flower heads with reflexed ray florets and central, dark brown discs. Z4–8

***H.* 'Sahin's Early Flowerer'.** Clump-forming, erect, bushy perennial. H to 3ft (90cm), S 2ft (60cm). Has lance-shaped, mid-green leaves. From midsummer until the first frost, produces large, bright reddish-orange flower heads with long ray florets, aging to orange and warm yellow, and central, brown discs. Z4–8

***H.* 'The Bishop'.** Clump-forming, erect, bushy perennial. H to 3ft (90cm), S 18in (45cm). Has lance-shaped, mid-green leaves. From midsummer to fall, bears sprays of yellow flower heads with reflexed ray florets and large, central, brown discs. Z4–8

***H.* 'Waltraut'** (illus. p.248). Clump-forming, erect, bushy perennial. H 32–36in (80–100cm), S 2ft (60cm). Has lance-shaped, mid-green leaves. From late summer, produces sprays of copper-orange and yellow flower heads that intensify in color as they age; the central disc is brown. Z4–8

***H.* 'Wyndley'.** Bushy perennial with branching stems. H 32in (80cm), S 2ft (60cm). Foliage is dark green. Bears sprays of daisylike, orange-yellow flower heads for a long period in late summer and fall. Needs regular division in spring or fall. Z4–8

HELIANTHEMUM

Rock rose, Sun rose

CISTACEAE

Genus of evergreen or semievergreen, spring- to fall-flowering shrubs, grown for their flowers. Useful for rock gardens and dry banks. Needs full sun and well-drained soil. Cut back lightly after flowering. Propagate by semiripe cuttings in late spring or early summer.

***H.* 'Amy Baring'.** Evergreen, spreading shrub. H 4–6in (10–15cm), S 2ft (60cm). Small, oblong, light gray leaves are hairy beneath. In summer, bears a succession of saucer-shaped, orange-centered, deep yellow flowers in loose, terminal clusters. Z6–8

H. apenninum illus. p.336.

H. atrorubens 'Monarch'. See H. 'Monarch'.

***H.* 'Ben Hope'.** Evergreen, domed shrub. H 8–12in (20–30cm), S 12in (30cm). Bears small, linear, gray-green leaves and saucer-shaped, carmine-red flowers in midsummer. Z6–8

***H.* 'Ben More'** illus. p.345.

***H.* 'Ben Nevis'.** Evergreen, hummock-forming, compact shrub. H and S 6–9in (15–23cm). Has small, linear, dark green leaves and, in midsummer, bears saucer-shaped, orange flowers with bronze centers. Z6–8

***H.* 'Fire Dragon'**, syn. *H.* 'Mrs. Clay', illus. p.340.

***H.* 'Golden Queen'.** Evergreen, domed, compact shrub. H 9in (23cm), S 12in (30cm). Saucer-shaped, golden-yellow flowers are produced amid small, linear, dark green leaves in midsummer. Z6–8

H. guttatum. See *Tuberaria guttata*.

***H.* 'Henfield Brilliant'.** Evergreen, spreading shrub. H 8–12in (20–30cm), S 12in (30cm). Has gray-green leaves and brick-red flowers. Z4–9

***H.* 'Jubilee'.** Evergreen, domed, compact shrub. H 8in (20cm), S 12in (30cm). Has small, linear, dark green leaves. Bears saucer-shaped, double, pale yellow flowers from spring to late summer. Z6–8

***H.* 'Mrs. Clay'.** See *H.* 'Fire Dragon'.

***H.* 'Mrs. C.W. Earle'.** Evergreen, spreading shrub. H to 6in (15cm), S 2ft (60cm). In spring and early summer, produces double, deep red flowers amid dark green leaves. Z4–9

***H.* 'Raspberry Ripple'.** Evergreen, spreading shrub. H 8in (20cm), S 12in (30cm). Saucer-shaped, red-centered, white flowers are borne in midsummer. Has small, linear, gray-green leaves. Z6–8

***H.* 'Rhodanthe Carneum'**, syn. *H.* 'Wisley Pink', illus. p.338.

***H.* 'The Bride'.** Evergreen, spreading shrub. H to 12in (30cm), S to 18in (45cm). Has small, gray-green leaves. In spring and early summer, produces abundant, single white flowers with bright yellow stamens. Z4–9

H. umbellatum. See *Halimium umbellatum*.

***H.* 'Wisley Pink'.** See *H.* 'Rhodanthe Carneum'.

***H.* 'Wisley Primrose'** illus. p.344.

HELIANTHUS

Sunflower

ASTERACEAE/COMPOSITAE

Genus of summer- and fall-flowering annuals and perennials, grown for their large, daisylike, usually yellow flower heads. May be invasive. All need sun and well-drained soil; some prefer moist conditions. Needs staking. Propagate by seed in spring, or division in fall or spring. ⓘ Contact with the foliage may aggravate skin allergies.

H. annuus (Sunflower). Fast-growing, erect annual. H 15ft (5m), S 2ft (60cm). Has ovate, serrated, mid-green leaves. Daisylike, brown- or purplish-centered, yellow flower heads, 12in (30cm) or more across, are produced in summer. Tall, intermediate and dwarf cultivars are available. Z8–10. **'Music Box'** (dwarf) illus. p.322. **'Russian Giant'** (tall), H 11½ft

(3.5m), has yellow flower heads with green-brown centers. **'Teddy Bear'** (dwarf) illus. p.322.
***H.* 'Capenoch Star'**, syn. *H.* x *multiflorus* 'Capenoch Star'. Clump-forming perennial. H to 5ft (1.5m), S 3ft (90cm). Produces single, lemon-yellow flowers with slightly darker yellow centers, from late summer to midfall. Z5–9
***H. debilis* subsp. *cucumerifolius* 'Italian White'.** Erect perennial. H 5ft (1.5m), S 1½–2ft (45–60cm). Purple-mottled stems bear coarsely hairy, sharply toothed, glossy, mid-green leaves. In summer, has large, black-centered, creamy-white to pale primrose flower heads. Z5–10
***H.* 'Lemon Queen'** illus. p.222.
***H.* 'Monarch'**, syn. *H. atrorubens* 'Monarch', *H.* 'The Monarch'. Erect perennial. H 6ft (2m), S 4ft (1.2m). Has lance-shaped, coarse, mid-green leaves. Bears terminal, daisylike, semidouble, golden-yellow flower heads on branching stems in late summer. Replant each spring to keep in check. Z5–9
***H.* x *multiflorus*.** Upright perennial. H 6ft (2m), S 3ft (90cm). Leaves are lance-shaped, coarse and mid-green. Has large, yellow flower heads, with double centers surrounded by larger, rayed segments, in late summer and early fall. Z5–9.
'Capenoch Star'. See *H.* 'Capenoch Star.'
'Loddon Gold' illus. p.222.
***H. orgyalis*.** See *H. salicifolius*.
H. salicifolius, syn. *H. orgyalis* (Willow-leaved sunflower), illus. p.222.
***H.* 'The Monarch'.** See *H.* 'Monarch'.

HELICHRYSUM

ASTERACEAE/COMPOSITAE

Genus of summer- and fall-flowering annuals, perennials (sometimes evergreen), and evergreen subshrubs and shrubs. When dried, flower heads are "everlasting." Needs sun and well-drained soil. Propagate shrubs and subshrubs by heel or semiripe cuttings in summer; perennials by division or seed in spring; annuals by seed in spring.
***H. alveolatum*.** See *H. splendidum*.
***H. angustifolium*.** See *H. italicum*.
***H. bellidioides*.** See *Anaphalioides bellidioides*.
***H. coralloides*.** See *Ozothamnus coralloides*.
H. italicum, syn. *H. angustifolium* (Curry plant). Evergreen, bushy subshrub. H 2ft (60cm), S 3ft (1m). Has linear, aromatic, silvery-gray leaves. Broad clusters of small, oblong, bright yellow flower heads are borne on long, upright, white shoots in summer. Z7–11. **subsp. *serotinum*** (syn. *H. serotinum*; Curry plant), H 16in (40cm) S 30in (75cm), is dome-shaped; stems and ovate leaves are densely felted with white hairs. Dislikes winter wet and cold climates.
***H. ledifolium*.** See *Ozothamnus ledifolius*.
H. marginatum of gardens. See *H. milfordiae*.
H. milfordiae, syn. *H. marginatum* of gardens. Evergreen, mat-forming, dense subshrub. H 2–4in (5–10cm), S 6–12in (15–30cm). Has basal rosettes of ovate, hairy, silver leaves. On sunny days in early summer, large, conical, red buds open into daisylike, white flower heads with red-backed petals; they close in dull or wet weather. Prefers very gritty soil. Dislikes winter wet. Propagate in spring by rooting single rosettes. Z7–10
H. petiolare, syn. *H. petiolatum* of gardens. Evergreen shrub. H 20in (50cm), S 6ft (2m). Forms mounds of silver-green shoots and ovate to heart-shaped, gray-felted leaves. In summer, bears daisylike, creamy-yellow flower heads. Often grown as an annual for groundcover and edging. Z11–15. **'Aureum'** see *H.p.* 'Limelight'.
'Limelight' (syn. *H.p.* 'Aureum') has lime-yellow leaves. **'Variegatum'** illus. p.165.
H. petiolatum of gardens. See *H. petiolare*.
***H. rosmarinifolium*.** See *Ozothamnus rosmarinifolius*.
***H.* 'Schwefellicht'**, syn. *H.* 'Sulphur Light', illus. p.275.
***H. selago*.** See *Ozothamnus selago*.
***H. serotinum*.** See *H. italicum* subsp. *serotinum*.
H. splendidum, syn. *H. alveolatum, H. trilineatum* of gardens. Evergreen, bushy, dense shrub. H and S 4ft (1.2m). Woolly, white shoots are clothed in small, oblong, silvery-gray leaves. Small, oblong, bright yellow flower heads borne in clusters from midsummer to fall or sometimes into winter. Z9–11
***H.* 'Sulphur Light'.** See *H.* 'Schwefellicht'.
H. trilineatum of gardens. See *H. splendidum*.

HELICONIA

HELICONIACEAE/MUSACEAE

Genus of tufted perennials, evergreen in warm climates, grown for their spikes of colorful flowers and for the attractive foliage on younger plants. Needs partial shade and humus-rich, well-drained soil. Water generously in growing season, very sparingly when plants die down in winter. Propagate by seed or division of rootstock in spring.
***H. metallica*.** Tufted perennial. H to 10ft (3m), S 3ft (1m). Oblong, long-stalked leaves, to 2ft (60cm) long, are velvety-green above with paler veins, sometimes purple below. In summer, mature plants bear erect stems with tubular, glossy, greenish-white-tipped, red flowers enclosed in narrow, boat-shaped, green bracts. Z12–14 (min. 59°F/15°C)
H. psittacorum (Parrot's flower, Parrot's plantain) illus. p.478.

HELICTOTRICHON

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
H. sempervirens, syn. *Avena candida, A. sempervirens* (Blue oat grass), illus. p.288.

HELIOPSIS

Ox eye

ASTERACEAE/COMPOSITAE

Genus of perennials grown for their sunflower-like flowerheads borne in summer. Requires sun and any well-drained soil. Propagate by seed or division in fall or spring.
***H.* 'Ballet Dancer'.** See *H. helianthoides* var. *scabra* 'Spitzentänzerin'.
***H. helianthoides*.** Clump-forming perennial. H 3–6ft (1–1.8m), S 2ft (60cm). Has lance-shaped, toothed, almost hairless, mid-green leaves. Produces numerous, long-stalked, single to double, yellow flower heads on branched stems from midsummer to early fall. Z4–9.
'Ballerina' see *H.h.* var. scabra 'Spitzentänzerin'. **subsp. *scabra*** see *H. helianthoides* var. *scabra*. **var. *scabra*** (syn. *H. scabra, H.h.* subsp. *scabra*) has very rough stems and leaves, and double, orange-yellow flower heads.
var. *scabra* 'Goldgefieder' bears double flower heads with golden yellow ray-florets and green disc-florets.
var. *scabra* 'Light of Loddon' (syn. *H.* 'Light of Loddon') has semidouble, bright yellow flower heads with raised centers, and dark green leaves.
var. *scabra* 'Patula' bears flattish, semidouble, orange-yellow flower heads.
var. *scabra* 'Spitzentänzerin' (syn. *H.* 'Ballet Dancer', *H.h.* 'Ballerina') freely bears semidouble, golden yellow flower heads with frilled petals.
***H.* 'Light of Loddon'.** See *H. helianthoides* var. *scabra* 'Light of Loddon'.
***H. scabra*.** See *H. helianthoides* var. *scabra*.

***Heliosperma alpestre*.** See *Silene alpestris*.

HELIOTROPIUM

Heliotrope

BORAGINACEAE

Genus of annuals, perennials, subshrubs and shrubs, grown for their fragrant flowers. Needs full sun and fertile, well-drained soil. Water container plants freely when in full growth, moderately at other times. In spring, tip prune young plants to promote a bushy habit and cut leggy, older plants back hard. Propagate by seed in spring, by greenwood cuttings in summer or by semiripe cuttings in early fall.
H. arborescens, syn. *H. peruvianum* (Cherry pie, Heliotrope), illus. p.310.
'Chatsworth' is a vigorous, evergreen, short-lived shrub. H 4ft (1.2m) in open ground, to 1½ft (45cm) in containers. Has wrinkled, sometimes purple-tinted, mid- to dark green leaves. Bears strongly scented, bright deep purple flower heads in summer. **'Marine'**, H to 18in (45cm), is compact, with deep violet-blue flower heads.
'Princess Marina', H to 12in (30cm), is compact, bearing deep violet-blue, highly scented flower heads. Z10–12 (min. 41°F/5°C)
***H. peruvianum*.** See *H. arborescens*.

***Helipterum manglesii*.** See *Rhodanthe manglesii*.
***Helipterum roseum*.** See *Rhodanthe chlorocephala* subsp. *rosea*.

HELLEBORUS

Hellebore

RANUNCULACEAE

Genus of perennials, some of which are evergreen, grown for their winter and spring flowers. Most deciduous species retain their old leaves over winter. These should be cut off in early spring as flower buds develop. Excellent in woodland gardenss. Prefers semishade and moisture-retentive, well-drained soil. Propagate by fresh seed or division in late summer or very early spring. Prone to aphid attack in early summer.
① All parts may cause severe discomfort if ingested, and the sap may cause skin irritation. See also feature panel p.281.
H. argutifolius, syn. *H. corsicus, H. lividus* subsp. *corsicus* (Corsican hellebore). Evergreen, clump-forming perennial. H 4ft (1.2m), S 3ft (90cm). Has divided, spiny, dark green leaves. Cup-shaped, pale green flowers are borne in large clusters in winter and spring. Z6–9. **'Silver Lace'** illus. p.262.
H. atrorubens of gardens. See *H. orientalis* subsp. *abchasicus* Early Purple Group.
***H. corsicus*.** See *H. argutifolius*.
H. cyclophyllus illus. p.283.
***H.* x *ericsmithii* 'Bob's Best'** illus. p.255. **'Winter Moonbeam'** is a robust, variable perennial. H and S 15in (38cm). Has overwintering, leathery, silver-veined, grayish-green leaves. Bears long-lasting, saucer-shaped, creamy-white flowers that age to pink, then pinkish-red, and are borne in branching clusters, singly, or in pairs, from midwinter to midspring. Z5–9
H. foetidus (Stinking hellebore) illus. p.283. **Wester Flisk Group**, illus. p.283.
H.* x *hybridus (Lenten rose). Evergreen, clump-forming perennial. H and S 18in (45cm). Nodding, cup-shaped, white, pink or purple flowers, sometimes darker spotted, rise above dense, divided foliage, in winter or early spring. Z6–9. Single- and double-flowered cultivars are available in various colors, including: double, plum; double, slate; double, white; double, white with spots; single, apricot; single, green; single, red; single, white with spots; single, yellow; single, yellow with spots (all illus. p.281). Ashwood Garden hybrids (double, black, illus. p.281; double, pink, illus. p.281). Bradfield hybrids (double, apricot with spots, illus. p. 281). Harvington hybrids (double, apricot, illus. p. 281; single, white, illus. p.281).
H. lividus*.** Evergreen, clump-forming perennial. H 18in (45cm) S 12in (30cm). Has 3-lobed, mid-green leaves, marbled pale green, purplish-green below, with obliquely ovate, slightly toothed or entire leaflets. Produces large clusters of cup-shaped, purple-suffused, yellow-green flowers in late winter. Z8–9. **subsp. *corsicus see *H. argutifolius*.
H. niger (Christmas rose). Evergreen, clump-forming perennial. H 12in (30cm), S 18in (45cm). Has divided, deep green leaves and bears cup-shaped, nodding, white flowers, with golden stamens, in winter or early spring. Z4–8. **'HGC Josef Lemper'** illus. p.281. **'Potter's Wheel'** illus. p.281.
H.* x *nigercors illus. p.281. **'Emma'** is a compact, evergreen, clump-forming perennial. H 16in (40cm), S 20in (50cm). Has matte, green leaves. From midwinter to early spring, freely bears branched clusters of saucer-shaped, white flowers that age to grayish-pink. Z4–9
H. odorus illus. p.283.
***H. orientalis* subsp. *abchasicus* Early Purple Group**, syn. *H. atrorubens* of gardens. Clump-forming perennial. H and S 18in (45cm). Has palmate, deeply divided, toothed, glossy, dark green

leaves. Shallowly cup-shaped, deep purple flowers are borne in late winter. Z4–8
H. purpurascens illus. p.260.
H.* x *sternii illus. p.262. **'Boughton Beauty'** illus. p.283.
H. thibetanus, illus. p.256.
H. viridis (Green hellebore). Deciduous, clump-forming perennial. H 8–16in (20–40cm) S 18in (45cm). Has divided, dark green leaves. Cup-shaped, green flowers are borne in late winter–early spring. Z6–9

HELONIAS

MELIANTHIACEAE/LILIACEAE

Genus of one species of spring-flowering, evergreen perennial. Excellent for a bog garden. Requires an open, sunny position and moist to wet soil. Propagate by division in spring or by seed in fall.
H. bullata (Swamp pink). Rosetted, clump-forming perennial. H 14–18in (35–45cm), S 12in (30cm). Has rosettes of strap-shaped, fresh green leaves, and bears dense racemes of small, fragrant, star-shaped, pinkish-purple flowers in spring. Z5–9

HELONIOPSIS

MELANTHIACEAE/LILIACEAE

Genus of spring-flowering, evergreen, rosette-forming perennials. Grow in semishade and in moist soil. Propagate by division after flowering in spring or by seed in fall or spring.
H. orientalis illus. p.256.

HELWINGIA

HELWINGIACEAE

Genus of evergreen or deciduous shrubs, bearing flowers and showy fruits directly on leaf surfaces, grown mainly for botanical interest. Requires separate male and female plants in order to produce fruits. Needs sun or semishade and moist soil. Propagate by semiripe cuttings in mid- to late summer.
***H. chinensis*.** Upright to spreading shrub. H 6ft (2m), S 5ft (1.5m). Purplish-green young branches mature to grayish-brown. Has narrowly lance-shaped, leathery, toothed, dark green leaves. Bears umbels of tiny flowers near the midrib on leaf uppersides in early summer, followed by black fruits. Z4–9

***Helxine soleirolii*.** See *Soleirolia soleirolii*.

HEMEROCALLIS

Daylily

HEMEROCALLIDACEAE/LILIACEAE

Genus of perennials, some of which are semievergreen or evergreen. Flowers, borne in succession, each last for only a day. Does best in full sun and fertile, moist soil. Propagate by division in fall or spring. Cultivars raised from seed will not come true to type; species may come true if grown in isolation from other daylilies. Slug and snail control is essential in early spring when young leaves emerge. See also feature panel pp.244–245.
***H.* 'All American Chief'.** Deciduous, clump-forming perennial. H 32in (80cm), S 30in (75cm). Well-branched flower stems, bear large, star-shaped, bright red flowers, with yellow throats, from early to mid-summer. Z3–10
***H.* 'Always Afternoon'** (illus. p.244). Robust, semievergreen, clump-forming perennial. H 22in (55cm), S to 30in (75cm). In summer and again in fall, produces rounded, slightly ruffled, lavender-mauve flowers, each with a dark purple band above the yellow-green throat. Z3–10
***H.* 'Arctic Snow'.** Deciduous, clump-forming perennial. H 23in (60cm), S 2ft (60cm). Produces huge, funnel-shaped, ivory-white flowers, with green throats and black anthers, from midsummer to early fall. Z3–10
***H.* 'Berlin Red'.** Vigorous, deciduous or semievergreen, clump-forming perennial. H 28–36in (70–90cm), S 2ft (60cm). In midsummer, bears open, rounded, rich velvety-red flowers with a blackish-red bloom at the margins and yellow midribs and throats. Z3–10
***H.* 'Black Magic'** (illus. p.245). Deciduous, clump-forming perennial. H and S 3ft (90cm). Has star-shaped, pale-edged, dark reddish-black flowers, with green throats, from midsummer to early fall. Z3–10
***H.* 'Bonanza'** (illus. p.245). Vigorous, deciduous or semievergreen, clump-forming perennial. H 3ft (1m), S 28in (70cm). Bears open, starlike, bright yellow flowers, with strongly red-marked centers, in midsummer. Z3–10
***H.* 'Brocaded Gown'.** Semievergreen, clump-forming perennial. H 26in (65cm), S 30in (75cm). In summer, bears rounded, creamy-yellow flowers, with green throats and recurved, crêpe-textured petals. Z3–10
***H.* 'Burning Daylight'** (illus. p.245). Robust, deciduous, clump-forming perennial. H 28in (70cm), S 20in (50cm). Bears triangular, intense orange-yellow flowers, with paler midribs and red marks around the throat bases, over a long period in summer. Z3–10
***H.* 'Canadian Border Patrol'** (illus. p.244). Vigorous, semievergreen, clump-forming perennial. H 26in (65cm), S 2ft (60cm). Produces abundant, funnel-shaped, cream flowers with purple throats from midsummer to early fall. Z3–10
***H.* 'Cartwheels'** (illus. p.245). Deciduous, clump-forming perennial. H 30in (75cm), S 2ft (60cm). In midsummer bears star-shaped, deep yellow to orange flowers, with lighter midribs and ruffled margins. Z3–10
***H.* 'Cathy's Sunset'** (illus. p.245). Deciduous, clump-forming perennial. H 2ft (60cm), S 20in (50cm). From midsummer to early fall, bears small, funnel-shaped flowers each with 3 yellow-striped, brick-red, inner petals and 3 yellow, outer petals. Z3–10
***H.* 'Cherry Cheeks'** (illus. p.244). Vigorous, deciduous or semievergreen, clump-forming perennial. H 32in (80cm), S 20in (50cm). Produces bright cherry-red flowers, with white midribs, over a long period in summer. Z3–10
***H.* 'Chicago Apache'.** Very vigorous, semievergreen, clump-forming perennial. H 28in (70cm), S 3ft (1m). Funnel-shaped, ruffled, rich scarlet flowers with white midribs, lemon-green throats and black anthers, are borne above prolific leaves in summer. Very adaptable. Z3–10
***H.* 'Chicago Sunrise'** (illus. p.245). Vigorous, clump-forming perennial. H 28in (70cm), S 34in (85cm). Very rounded, slightly ruffled, rich yellow flowers, with faint bronze bands and darker throats, are borne in summer. Z3–10
***H.* 'Children's Festival'.** Deciduous, clump-forming perennial. H 22in (55cm), S 20in (50cm). Thick-petals form funnel-shaped flowers, with rosy tints and apricot throats, midsummer to early fall. Z3–10
***H.* 'Christmas Is'.** Vigorous, deciduous, clump-forming perennial. H and S 2ft (60cm). Funnel-shaped, crimson-red flowers, with green throats, open from midsummer to early fall. Z3–10
***H.* 'Chorus Line'.** Extended-blooming, evergreen, clump-forming perennial. H and S 20in (50cm). Produces remontant, triangular, fragrant, bright pink flowers, with pink- and yellow-marked petals and dark green throats, from early to midsummer. Z3–10
H. citrina (illus. p.245). Vigorous, coarse-growing, clump-forming perennial. H 4ft (1.2m), S 2½ft (75cm). Many large, very fragrant, trumpet-shaped, rich lemon-yellow flowers open at night in midsummer; each lasts one day. Z3–10
***H.* 'Corky'.** Clump-forming, evergreen perennial. H 28in (70cm) S 16in (40cm). Bears abundant, star-shaped, lemon-yellow flowers with reddish-brown sepals, in late spring and early summer. Z3–10
***H.* 'Cream Drop'** (illus. p.245). Robust, deciduous or semievergreen, clump-forming perennial. H 2ft (60cm), S 18in (45cm). In midsummer, bears numerous, scented, well-formed, creamy-yellow flowers, with ruffled margins. Z3–10
***H.* 'Crimson Pirate'.** Vigorous, deciduous, clump-forming perennial. H 30in (75cm), S 20in (50cm). In mid- and late summer, has open, star-shaped, crimson-red blooms, with paler midribs. Z3–10
***H.* 'Custard Candy'.** Vigorous, deciduous, clump-forming perennial. H 2ft (60cm), S 16in (40cm). In early and mid-summer, produces an abundance of rounded, creamy-yellow flowers, each with a feathered, red-brown band around the greenish-yellow eye. Z3–10
H. dumortieri (illus. p.245). Compact, clump-forming perennial. H 20in (50cm), S 18in (45cm). Mid-green leaves are strap-shaped, stiff, and coarse. In early summer, produces fragrant, trumpet-shaped, brown-backed, golden-yellow flowers. Z3–10
***H.* 'Ed Murray'.** Vigorous, free-flowering, deciduous or semievergreen, clump-forming perennial. H 26–28in (65–70cm), S 20in (50cm). Bears rounded, ruffled, deep maroon-red flowers, with yellowish-green throats, in early and mid-summer. Z3–10
***H.* 'Eenie Weenie'.** Clump-forming, dwarf, deciduous perennial. H and S 1ft (30cm). Bears abundant, funnel-shaped, clear yellow flowers with green throats, in early summer. Z3–10
***H. flava*.** See *H. lilioasphodelus*.
***H.* 'Frans Hals'** (illus. p.245). Strong-growing, free-flowering, deciduous, clump-forming perennial. H 2ft (60cm), S 15–18in (38–45cm). In mid- and late summer, bears open, starlike flowers, with yellow outer petals and three cinnamon-red inner petals with yellow midribs. Z3–10
H. fulva (illus. p.245). Vigorous, semievergreen, clump-forming perennial. H 3ft (1m), S 4ft (1.2m). Trumpet-shaped, tawny-orange flowers are borne from mid- to late summer above a mound of strap-shaped, light green leaves. Z3–10. **'Flore Pleno'** (illus. p.245), H 30in (75cm), has double flowers with dark red eyes.
***H.* 'Gentle Shepherd'.** Semievergreen, clump-forming perennial with wispy leaves. H 26in (65cm), S 4ft (1.2m). In early and mid-summer, bears rounded, ruffled, white flowers, with green throats. Z3–10
***H.* 'Golden Chimes'** (illus. p.245). Clump-forming, evergreen perennial of graceful habit. H 3ft (90cm), S 18in (45cm). Bears small, delicate, star-shaped, golden-yellow flowers, with a brown reverse, lasting only a day, from early to midsummer. Z3–10
***H.* 'Golden Prize'.** Vigorous, deciduous, clump-forming perennial. H 26in (65cm), S 24–36in (60–90cm). Produces large, rounded, star-shaped, golden-yellow flowers in mid- and late summer. Z3–10
***H.* 'Grape Velvet'.** Evergreen, clump-forming perennial. H 2ft (60cm), S 30in (75cm). Bears triangular, deep purple flowers with recurved petals, lighter midribs and yellow-green throats, in summer. Z3–10
***H.* 'Green Flutter'** (illus. p.245). Semievergreen, clump-forming perennial. H 20in (50cm), S 3ft (1m). Produces abundant, star-shaped, ruffled, canary-yellow flowers, with bright green throats, in late summer and early fall. Z3–10
***H.* 'Happy Returns'.** Evergreen, clump-forming perennial. H 16in (40cm), S 2ft (60cm). Bears small, fragrant, rounded, light yellow flowers in summer. Z3–10
***H.* 'Helle Berlinerin'.** Evergreen, clump-forming perennial. H 30in (75cm), S 32in (80cm). Bears rounded flowers, with a faint apricot blush and yellow throats, on strong stems in midsummer. Z3–10
***H.* 'Hyperion'.** Clump-forming, evergreen perennial. H 3ft (90cm) S 2½ft (75cm). In midsummer, bears fragrant, triangular to star-shaped, pale lemon-yellow flowers. Z3–10
***H.* 'Joan Senior'** (illus. p.244). Vigorous, semievergreen, clump-forming perennial. H 2ft (60cm), S 2½ft (75cm). Open trumpet-shaped, white, pink-flushed flowers, with yellow-green throats, are produced on well-branched stems from mid- to late summer. Z3–10
***H.* 'Jolyene Nichole'.** Semievergreen, clump-forming perennial. H and S 14in (35cm). Bears rounded, strongly ruffled, rose-pink flowers with deeper pink veins, amid lush, blue-green leaves. Z3–10
***H.* 'Lady Fingers'.** Semievergreen, clump-forming perennial with narrow leaves. H 32in (80cm), S 30in (75cm). In midsummer, bears spider-shaped, pale yellow-green flowers with green throats and spoon-shaped petals. Z3–10
***H.* 'Lark Song'.** Vigorous, deciduous, clump-forming perennial. H 32–36in (80–90cm), S 2ft (60cm). Bears fragrant, bowl-shaped, pale yellow blooms, on blackish stems, in mid- and late summer. Z3–10
***H.* 'Lemon Bells'** (illus. p.245). Evergreen, clump-forming perennial. H 34in (85cm), S 2ft (60cm). Bears sprays of small, deep lemon-yellow flowers, with green-tinted throats, in midsummer. Z3–10

H. lilioasphodelus, syn. *H. flava* (illus. p.245). Rhizomatous, extended-blooming, semievergreen perennial. H and S 3ft (1m). Strap-shaped leaves are mid-green. Slender scapes bear star-shaped, fragrant, clear lemon-yellow flowers, in late spring and early summer. Z3–10

***H.* 'Lime Frost'.** Well-branched, deciduous perennial. H 26in (65cm), S 30in (75cm). In late summer, bears circular to triangular, lightly ruffled flowers that are translucent, frosted, and greenish-white, with wide, lime-green throats. Z3–10

***H.* 'Little Grapette'** (illus. p.245). Free-flowering, vigorous, semievergreen, compact, clump-forming perennial. H 12in (30cm), S 18in (45cm). Bears star-shaped, deep purple flowers, with rounded, ruffle-margined petals, darker purple eyes and green throats, in summer. Z3–10

***H.* 'Little Wine Cup'** (illus. p.245). Vigorous, deciduous, clump-forming perennial. H 18in (45cm), S 12in (30cm). In early and mid-summer, bears abundant, lightly ruffled, wine-red flowers, with paler midribs and yellow-green throats. Z3–10

***H.* 'Luxury Lace'** (illus. p.244). Vigorous, deciduous, clump-forming perennial. H 28–30in (70–75cm), S 24–36in (60–90cm). In midsummer, bears remontant, fragrant, star-shaped, pale lavender-pink flowers, with ruffle-margined petals and dark green throats. Z3–10

***H.* 'Mahogany Magic'.** Branching, semievergreen, clump-forming perennial. H 22in (55cm), S 26in (65cm). Has circular, ruffled, rich mahogany-red flowers, in midsummer, with deeper mahogany eyes, gold-green throats, and lighter orange edging in hot weather. Z3–10

***H.* 'Mallard'.** Deciduous, clump-forming perennial. H and S 2ft (60cm). Produces funnel-shaped, rich red flowers, with small golden throats and a slender, central, pale stripe on each petal, from midsummer to early fall. Z3–10

***H.* 'Marion Vaughn'.** Clump-forming, evergreen perennial. H 34in (85cm), S 30in (75cm). In late summer, bears very fragrant, star-shaped, green-throated, clear lemon-yellow flowers; each petal has a raised, near-white midrib. Z3–10

***H.* 'Mauna Loa'** (illus. p.245). Vigorous, free-flowering, evergreen, clump-forming perennial. H 22in (55cm), S 3ft (1m). Bears rounded, bright tangerine-orange flowers, with chartreuse throats and black anthers, in mid- to late summer. Z3–10

***H.* 'Michele Coe'.** Vigorous, evergreen or semievergreen, clump-forming perennial. H 3ft (1m), S 30in (75cm). In midsummer, bears rounded, pale apricot flowers with light lavender-pink midribs. Z3–10

H. minor (Grass-leaved daylily). Compact, clump-forming perennial. H 16in (40cm), S 18in (45cm). Has narrowly strap-shaped, mid-green leaves that die back in early fall. In early summer, bears fragrant, trumpet-shaped, lemon-yellow flowers, with tawny-backed, outer petals. Z3–10

***H.* 'Missenden'** (illus. p.245). Vigorous, deciduous, clump-forming perennial. H 3½ft (1.1m), S 24–28in (60–70cm). In midsummer, bears large, funnel-shaped, rich velvety-red flowers with a velvety, black sheen and yellow midribs. Z3–10

***H.* 'Moonlit Masquerade'.** Well-branched, semievergreen perennial. H 26in (65cm), S 32in (80cm). From early to midsummer, bears circular, alabaster-white flowers, with ruffled, overlapping petals, notched, purple-black eyes, olive-green throats, ivory-lime-green filaments, and conspicuous black anthers. Z3–10

***H.* 'Neyron Rose'** (illus. p.244). Vigorous, deciduous, clump-forming perennial. H 3ft (1m), S 24–28in (60–70cm). In early and mid-summer, has pink-suffused, orange-brown flowers, with white midribs. Z3–10

***H.* 'Night Beacon'** (illus. p.244). Evergreen, clump-forming perennial. H 28in (70cm), S 30in (75cm). In early and mid-summer, produces rounded, very dark burgundy-black flowers, with black-purple bands, lemon-green throats and pearl-white midribs. Z3–10

***H.* 'Pardon Me'** (illus. p.244). Deciduous, clump-forming perennial. H and S 18in (45cm). Small, fragrant, rounded, bright burgundy-red flowers, with greenish-yellow throats, are borne from midsummer to early fall. Z3–10

***H.* 'Pink Damask'** (illus. p.244). Vigorous, deciduous, free-flowering, clump-forming perennial. H and S 3ft (90cm). Produces a profusion of star-shaped, rich salmon-pink flowers in summer. Z3–10

***H.* 'Prairie Blue Eyes'** (illus. p.244). Semievergreen, clump-forming perennial. H 32in (80cm), S 3ft (90cm). In midsummer, bears lavender flowers, banded blue-purple, with green throats. Z3–10

***H.* 'Real Wind'.** Vigorous, free-flowering, evergreen, clump-forming perennial with dense foliage. H 26in (65cm), S 3ft (1m). From mid- to late summer, sturdy scapes bear triangular, pale salmon-pink flowers, with recurved petals and large, rose-pink eyes. Z3–10

***H.* 'Red Precious'** illus. p.235.

***H.* 'Rose Emily'.** Semievergreen, clump-forming perennial. H and S 18in (45cm). In midsummer, bears rounded, rose-pink flowers with ruffled margined petals and pale green throats. Z3–10

***H.* 'Ruffled Apricot'.** Slow-growing, clump-forming perennial. Large, triangular, deep apricot flowers, with lavender-pink midribs, and ruffled margins are borne in midsummer. Z3–10

***H.* 'Siloam Baby Talk'** (illus. p.244). Vigorous, free-flowering, deciduous, clump-forming perennial. H 14–16in (35–40cm), S 8–10in (20–25cm). Bears rounded, ruffled-margined, creamy-pink flowers, with pale purple bands above bright green throats, in midsummer. Z3–10

***H.* 'Siloam Ethel Smith'.** Evergreen, clump-forming perennial. H 20in (50cm), S 18in (45cm). In midsummer, bears abundant, rounded, creamy-beige flowers, with triangular, red, yellow and olive-green eyes. Z3–10

***H.* 'Siloam Virginia Henson'.** Clump-forming perennial. H 18in (45cm), S 26in (65cm). In early summer, bears rounded, ruffled, creamy-pink flowers banded with rose-pink and with green throats. Z3–10

***H.* 'Stafford'** (illus. p.245). Vigorous, evergreen, clump-forming perennial. H 28in (70cm), S 3ft (1m). Bears abundant, star-shaped, scarlet flowers with yellow midribs and throats in midsummer. Z3–10

***H.* 'Stoke Poges'** (illus. p.244). Deciduous, clump-forming perennial. H 28in (70cm), S 20in (50cm). Triangular, fragrant, salmon-pink flowers with reflexed petal tips and a deep pink zone around the golden throat, appear in midsummer. Z3–10

***H.* 'Strawberry Candy'.** Robust, semievergreen or deciduous, clump-forming perennial. H 26in (65cm), S 18–24in (45–60cm). In early and mid-summer, bears circular, strawberry-pink flowers with red picotee margins and ruby-red marks around yellowish throats. Z3–10

***H.* 'Strutter's Ball'.** Deciduous, clump-forming perennial. H 28in (70cm), S 2ft (60cm). Bears triangular, rich deep, blue-purple flowers, each with a silvery zone above small, lemon-yellow throat, from midsummer to early fall. Z3–10

***H.* 'Summer Wine'** (illus. p.244). Strong-growing, deciduous, clump-forming perennial. H 2ft (60cm), S 18in (45cm). In early and mid-summer, bears open, soft purple flowers, with yellowish-green throats and very pale purple to white midribs. Broad inner petals are slightly ruffled. Z3–10

***H.* 'Whichford'** (illus. p.245). Deciduous, clump-forming perennial. H 4ft (1.2m), S 20in (50cm). Fragrant, slightly star-shaped, green-budded, clear lemon-yellow flowers, with green throats, are borne on sturdy stems from midsummer. Z3–10

***H.* 'White Temptation'.** Semievergreen, clump-forming perennial. H 30in (75cm), S 26in (65cm). Triangular, white flowers, with slightly crinkled edges and green throats, are produced from midsummer to early fall. Z3–10

HEMIGRAPHIS

ACANTHACEAE

Genus of annuals, perennials, and subshrubs, usually grown for their colorful, toothed or scalloped leaves. Grows well in bright but not direct sunlight and in moist but well-drained soil. Water frequently during growing season, less in winter. Regularly cut back straggly stems to tidy. Propagate by stem cuttings in summer or fall.

H. repanda illus. p.473.

HEMIORCHIS

ZINGIBERACEAE

Genus of herbaceous, rhizomatous perennials, grown for their orchidlike flowers, which emerge above ground before the leaves. Grow in humus-rich, moist but well-drained soil in shade. More tolerant of winter wet than most gingers, so water occasionally during dormancy. Propagate by division of the rhizome in early spring.

H. pantlingii. Herbaceous, rhizomatous perennial. H and S 12in (30cm). Has broadly lance-shaped, glossy, mid-green leaves, to 6in (15cm) long. Stem, 4–6in (10–15cm) long, bears up to 20 flowers in succession in spring, each with 3 pale brown outer lobes surrounding a deep red-veined, golden-yellow inner lobe. Z3–10

HEPATICA

RANUNCULACEAE

Genus of very variable perennials, some of which are semievergreen. Flowers are produced in early spring before new leaves are properly formed. Needs partial shade and deep, humus-rich, moist soil. Sturdy, much-branched rootstock resents disturbance. Propagate by seed when fresh or by division or removing side shoots in spring.

H. angulosa. See *H. transsilvanica*.

***H.* x *media* 'Ballardii'.** Slow-growing, dome-shaped perennial. H 6in (15cm), S 8in (20cm). Has rounded, 3-lobed, stalked, soft green leaves and, in early spring, shallowly cup-shaped, many-petaled, intense blue flowers. Fully double, colored forms are also known. Propagate by division only. Z3–8

H. nobilis, syn. *Anemone hepatica, H. triloba*. Slow-growing, semievergreen, dome-shaped perennial. H 4in (10cm), S 6in (15cm). Bears rounded, 3-lobed, fleshy, mid-green leaves. Shallowly cup-shaped, many-petaled flowers—white through pink to carmine, pale to deep blue or purple—are produced in early spring. Fully double, colored forms are also known. Excellent in a woodland or rock garden. Z5–8. **var. *japonica*** illus. p.355.

H. transsilvanica, syn. *H. angulosa*. Semievergreen, spreading perennial. H 6in (15cm), S 8in (20cm). Shallowly cup-shaped, many-petaled flowers, varying from blue to white or pink, are produced in early spring amid rounded, 3-lobed, hairy, green leaves. Fully double, colored forms are also known. Z5–8

H. triloba. See *H. nobilis*.

Heptapleurum. See *Schefflera*.

HERBERTIA

IRIDACEAE

Genus of spring-flowering perennial bulbs, grown mainly for their irislike flowers. Requires full sun and well-drained soil. Reduce watering when bulb dies down after flowering. Propagate by seed in fall.

H. pulchella. Spring-flowering bulb. H 4–6in (10–15cm), S 2in (5cm). Erect, basal leaves are narrowly lance-shaped and pleated. Produces a succession of upward-facing, violet-blue flowers, 2–2½in (5–6cm) across, usually with dark-spotted centers. Z10–11

HERMANNIA

STERCULIACEAE

Genus of evergreen perennials, subshrubs and shrubs, grown mainly for their bell-shaped flowers. Prefers full light and fertile, well-drained soil. Water containerized plants freely when in full growth, moderately at other times. Tip prune young plants to produce well-branched specimens. Propagate by softwood or greenwood cuttings in late spring or summer.

H. stricta. Low subshrub. H and S 12in (30cm). Has ovate to oblong, mid-green leaves, with scalloped to lobed margins. From spring to summer, bears pendent, pink, bell-shaped flowers, in short sprays at the stem tips. Z10–12 (min. 45°F/7°C)

Hermodactylus tuberosus. See *Iris tuberosa*

HERTIA

ASTERACEAE/COMPOSITAE

Genus of evergreen shrubs, grown for their daisylike flower heads in summer. Needs sun and well-drained soil. Propagate by softwood cuttings in early summer.

H. cheirifolia, syn. *Othonna cheirifolia*, *Othonnopsis cheirifolia*, illus. p.344.

HESPERALOE

ASPARAGACEAE

Genus of basal-rosetted, perennial succulents with very narrow, strap-shaped, grooved, dark green leaves, that often have peeling, white fibers at their margins. Closely related to *Agave* and *Yucca*. Grows well in a sunny situation and in very well-drained soil. Propagate by seed or division in spring or summer, or from offsets, which are freely produced at the base.

H. parviflora, syn. *Yucca parviflora*, illus. p.484.

HESPERANTHA

SYN. SCHIZOSTYLIS

IRIDACEAE

Genus of spring-flowering corms with spikes of small, funnel- or cup-shaped flowers, which now includes the rhizomatous plant formerly known as *Schizostylis coccinea*. Needs full sun and well-drained soil. Plant in fall, water sparingly in winter, and dry off corms after flowering. Propagate by seed in fall or spring.

H. buhrii. See *H. cucullata*.

***H. coccinea* 'Major'** (syn. *Schizostylis coccinea* 'Grandiflora') illus. p.279. **'Mrs. Hegarty'** is a vigorous, clump-forming, rhizomatous perennial. H 2ft (60cm), S 9–12in (23–30cm). In midfall, bears spikes of shallowly cup-shaped, pale pink flowers above tufts of grasslike, mid-green leaves. **'Sunrise'** illus. p.278. **'Viscountess Byng'** has pink flowers that last until late fall. Z7–9

H. cucullata, syn. *H. buhrii*. Spring-flowering corm. H to 12in (30cm), S 2in (5cm). Has linear, erect leaves on lower part of branched stems, each of which produces a spike of up to 7 cup-shaped, white flowers, flushed pink or purple outside, that open only at evening. Z10–11

HESPERIS

BRASSICACEAE/CRUCIFERAE

Genus of late spring- or summer-flowering biennials and perennials, grown for their clusters of fragrant, cross-shaped flowers. Requires a sunny site and well-drained soil. *H. matronalis* tolerates poor soil. Tends to become woody at the base, so raise new stock from seed every few years. Propagate by basal cuttings in spring or by seed in fall or spring.

H. matronalis (Dame's violet, Sweet rocket). Rosette-forming biennial or short-lived perennial. H to 3ft (90cm), S 18in (45cm). Leafy stems bear ovate to oblong, toothed, hairy, dark green leaves. Bears lilac or purple, sometimes white or very pale lilac, flowers from late spring to midsummer. Very attractive to insects. Z4–9. var. albiflora illus. p.230.

HESPEROYUCCA

ASPARAGACEAE/AGAVACEAE

Genus of evergreen, rosette-forming, stemless, sometimes rhizomatous, evergreen perennials, grown for their architectural sword-shaped, clustered leaves and panicles of strongly fragrant, white flowers. Requires full sun and well-drained soil. Water container specimens moderately in full growth, sparingly in winter. Propagate by seed sown under glass at 55–64°F (13–18°C) in spring; seed-raised plants may take 15–20 years or more to flower.

H. whipplei, syn. *Yucca whipplei* (Our Lord's candle), illus. p.151.

HETEROCENTRON

SYN. HEERIA

MELASTOMATACEAE

Genus of deciduous, summer- and fall-flowering perennials and low-growing, evergreen shrubs or subshrubs. Needs sun and well-drained soil. Propagate by softwood or stem-tip cuttings in spring or early summer.

H. elegans, syn. *Schizocentron elegans* (Spanish shawl), illus. p.472.

HETEROMELES

ROSACEAE

Genus of one species of evergreen tree or large shrub, grown mainly for its showy clusters of hollylike fruits. Requires fertile, well-drained soil in full sun, with protection from cold, drying winds in winter. Propagate by seed in fall or semiripe cuttings in summer.

H. arbutifolia. See *H. salicifolia*.

H. salicifolia, syn. *H. arbutifolia, Photinia arbutifolia* (Christmas berry, Toyon). Evergreen, bushy, spreading shrub or tree. H 25ft (8m), S 10ft (3m). Has oblong, sharply toothed, leathery, glossy, dark green leaves. Broad, flat heads of small, 5-petaled, white flowers, borne in late summer, are followed by large clusters of rounded, red fruits. Z9–11

HEUCHERA

Coral flower

SAXIFRAGACEAE

Genus of evergreen and semievergreen, summer-flowering perennials forming large clumps of leaves, that are often tinted bronze or purple. Provides good ground-cover. Prefers semishaded position and moisture-retentive but well-drained soil. Propagate species by seed in spring or by division in fall or spring, and cultivars by division only, using young, outer portions of crown. See also feature panel p.282.

***H.* 'Amber Waves'** (illus. p.282). Evergreen, clump-forming perennial. H 8–12in (20–30cm), S to 20in (50cm). Rounded, lobed, lightly ruffled orange-yellow leaves are pale burgundy beneath. In summer, bears loose sprays of small, pendent, bell-shaped, light-rose flowers. Z3–8

***H. americana* 'Harry Hay'.** Vigorous, evergreen, clump-forming perennial. H 20–36in (50–100cm), S 32in (80cm) or more. Has large, rounded, lobed, purplish-brown leaves. In summer, bears spires of pendent, bell-shaped, white flowers. Z4–8

***H.* 'Beauty Colour'** (illus. p.282). Evergreen, clump-forming perennial. H 8–12in (20–30cm), S to 20in (50cm). Rounded, lobed, burgundy-veined leaves are marbled silver and edged green. Leaf color intensifies in cold periods. Bears loose, arching sprays of small, pendent, bell-shaped, ivory flowers in summer. Z3–8

***H.* 'Blackbird'** (illus. p.282). Evergreen, clump-forming perennial. H 10–12in (25–30cm), S to 12in (30cm). Has rounded, lobed, rather ruffled, maroon-brown leaves. In summer, bears sprays of small, pendent, bell-shaped, rose-pink flowers. Z3–8

***H.* 'Can-can'** (illus. p.282). Vigorous, evergreen, clump-forming perennial. H 20in (50cm), S 12in (30cm). Rounded, lobed, ruffled, dark-veined, silver-gray leaves are rich wine-red beneath; leaves turn pinkish with cooler conditions. In summer, bears loose sprays of pendent, small, bell-shaped, pale pink flowers. Z3–8

***H.* 'Chocolate Ruffles'** (illus. p.282). Evergreen, clump-forming perennial. H 28–30in (70–75cm), S 18in (45cm). Rounded, lobed, ruffled, chocolate-brown leaves have burgundy undersides. In summer, produces loose sprays of small, pendent, bell-shaped, white flowers. Z3–8

***H.* 'Cinnabar Silver'** (illus. p.282). Evergreen, clump-forming perennial. H 12in (30cm), S 20in (50cm). Forms a mound of beautiful rounded, lobed, purple-flushed silver leaves; the purple color intensifies in cool conditions. In summer, produces loose sprays of small, red, pendent, bell-shaped flowers. Z3–8

***H.* 'Citronelle'.** Evergreen, clump-forming perennial. H 10–12in (25–30cm), S 14in (35cm). Has rounded, lobed, lime-green leaves. In summer, produces loose sprays of small, pendent, bell-shaped, creamy-white flowers. Z4–8

***H.* 'Coral Cloud'.** Evergreen, clump-forming perennial. H 18–30in (45–75cm), S 12–18in (30–45cm). In early summer, bears long, feathery sprays of small, pendent, bell-shaped, coral-red flowers. Leaves are rounded, lobed, toothed, glistening and dark green. Z4–8

***H.* Crème Brûlée ('Tnheu041')** (illus. p.282). Evergreen, clump-forming perennial. H 16in (40cm), S 20in (50cm). Rounded, lobed, caramel, bronze and gold leaves fade as they age. In summer, bears loose sprays of small, pendent, bell-shaped, pink flowers. Z3–8

***H. cylindrica* 'Greenfinch'.** Evergreen, clump-forming perennial. H 3ft (90cm), S 2ft (60cm). Has deeply lobed, heart-shaped, dark green leaves and, in summer, spikes of small, bell-shaped, pale green or greenish-white flowers. Z4–8

***H.* 'E and I'.** See *H.* Ebony and Ivory ('E and I').

***H.* Ebony and Ivory ('E and I')** (illus. p.282). Evergreen, clump-forming, compact perennial. H 20in (50cm), S 18–24in (45–60cm). Has rounded, lobed, rather ruffled, ebony-black leaves. In summer, bears many loose sprays of small, pendent, bell-shaped, ivory-white flowers. Z3–8

***H.* 'Firebird'.** Evergreen, compact perennial. H 2ft (60cm), S 1ft (30cm). In early summer, bears long, feathery sprays of small, pendent, bell-shaped, crimson-scarlet flowers. Leaves are rounded, lobed, toothed and dark green. Z4–8

***H.* 'Georgia Peach'** (illus. p.282). Evergreen, clump-forming perennial. H 30in (75cm), S 2ft (60cm). Large, rounded, lobed, silvery pinkish-peach leaves are most vibrant when young. In summer, produces loose sprays of small, pendent, bell-shaped, white flowers. Z3–8

***H.* 'Ginger Ale'** (illus. p.282). Evergreen, clump-forming perennial. H 18in (45cm), S 10in (25cm). Has rounded, lobed, silvery-white-marbled, pale orange leaves. In summer, produces loose sprays of small, pendent, bell-shaped, creamy-pink flowers. Z3–8

***H.* 'Green Spice'** (illus. p.282). Evergreen, clump-forming perennial. H 28in (70cm), S 16in (40cm). Rounded, lobed, silvery-green leaves have dark purple veins and dark gray edges. In summer, produces loose sprays of small, pendent, bell-shaped, greenish-white flowers. Z3–8

***H.* Key Lime Pie ('Tnheu042').** Evergreen, clump-forming perennial. H and S 16in (40cm). Has rounded, lobed, lime-green leaves. In summer, produces loose sprays of small, pendent, bell-shaped, pinkish-white flowers. Z4–8

***H.* 'Lime Rickey'** (illus. p.282). Strong-growing, evergreen, clump-forming perennial. H 16–20in (40–50cm), S 20in (50cm). Rounded, lobed, ruffled, lime-green leaves are brightest in spring. In summer, produces loose sprays of small, pendent, bell-shaped, white flowers. Z3–8

***H. micrantha* var. *diversifolia* 'Palace Purple'.** See *H. villosa* 'Palace Purple'.

***H.* 'Midnight Rose'** (illus. p.282). Evergreen, clump-forming perennial. H 2ft (60cm), S 16in (40cm). Rounded, lobed, dark purple leaves have pink speckles that get larger as the season progresses and may fade to cream. In summer, produces loose sprays of small, pendent, bell-shaped, cream flowers. Z3–8

***H.* 'Molly Bush'.** Evergreen, vigorous, clump-forming perennial. H 30in (70cm), S 34in (85cm). Has sharply lobed, glossy, very dark bronze-purple leaves, lighter purple beneath. Throughout summer, bears small, bell-shaped, greenish-white flowers. Tolerates sun. Z4–9

***H.* 'Obsidian'.** Evergreen, clump-forming perennial. H 2ft (60cm), S 16in (40cm). Has rounded, lobed, smooth, glossy, dark purple-black leaves. In summer, bears loose sprays of small, pendent, bell-shaped, ivory flowers on red stems. Z4–8

***H.* 'Palace Purple'.** See *H. villosa* 'Palace Purple'.

***H.* 'Peach Flambé'** (illus. p.282). Evergreen, clump-forming perennial. H 16in (40cm), S 14in (35cm). Large, rounded, lobed, smooth, rich peach leaves develop purplish hues in winter. In summer, bears loose sprays of small, pendent, bell-shaped, white flowers. Z3–8

***H.* 'Peppermint Spice'** (illus. p.282). Evergreen, clump-forming, compact perennial. H 16in (40cm), S 12–16in (30–40cm). Has rounded, lobed, purple-veined, silver-green leaves. In summer produces

loose sprays of small, pendent, bell-shaped, soft pink flowers. Z3–8
***H.* 'Pewter Moon'** (illus. p.282). Evergreen, clump-forming perennial. H 16in (40cm), S 12–20in (30–50cm). Rounded, lobed, veined, silvery-green leaves have deep maroon undersides. In summer, produces loose sprays of small, pendent, bell-shaped, soft pink flowers on maroon stems. Z3–8
***H.* 'Plum Pudding'** illus. p.280.
***H.* 'Purple Petticoats'** (illus. p.282). Evergreen, clump-forming perennial. H 2½ft (70cm), S 2ft (60cm). Rounded, lobed, ruffled, rich purple leaves are a brighter reddish-purple beneath. In summer, produces loose sprays of small, pendent, bell-shaped, cream flowers. Z3–8
***H.* 'Red Spangles'.** Evergreen, clump-forming perennial. H and S 12in (30cm). Has heart-shaped, purplish-green leaves and spikes of small, bell-shaped, crimson-scarlet flowers in summer. Z3–8
***H.* 'Regina'.** Compact, evergreen, clump-forming perennial. H 16in (40cm), S 10in (25cm). Shallowly lobed leaves are reddish-purple and silver mottled, with an overall metallic sheen. Bears small, bell-shaped, pink flowers from late spring to late summer. Z4–9
***H. sanguinea* 'Snow Storm'**, syn. *H. sanguinea* var. *pulchra* 'Snow Storm' (illus. p.282). Slow-growing, evergreen, clump-forming perennial. H 16in (40cm), S 12–16in (30–40cm). Rather small, rounded, lobed, green leaves each have a large, creamy-white center. In summer, produces loose sprays of small, pendent, bell-shaped, coral-pink flowers. May be short-lived. Z3–8
***H. sanguinea* var. *pulchra* 'Snow Storm'.** See *H. sanguinea* 'Snow Storm'.
***H.* 'Scintillation'.** Evergreen, clump-forming perennial. H 18–30in (45–75cm), S 12–18in (30–45cm). Bears rounded, lobed, toothed and dark green leaves. In early summer, produces long, feathery sprays of small, pendent, bell-shaped, deep pink flowers, rimmed with coral-pink. Z3–8
***H.* 'Silver Scrolls'** (illus. p.282). Evergreen, clump-forming perennial. H 2ft (60cm), S 16in (40cm). Rounded, lobed, silver and burgundy leaves are most vibrant when young. In summer, produces loose sprays of small, pendent, bell-shaped, pinkish-white flowers. Z3–8
***H.* 'Southern Comfort'** (illus. p.282). Strong-growing, evergreen, clump-forming perennial. H 22in (55cm), S 2ft (60cm). Large, rounded, lobed, rather hairy, brownish-peach leaves age to burnt-copper. In summer, produces loose sprays of small, pendent, bell-shaped, white flowers. Z3–8
***H.* 'Stormy Seas'.** Evergreen, clump-forming perennial. H 16in (40cm), S 16–20in (40–50cm). Rounded, lobed, gray-silver-mottled, glossy, maroon-purple leaves, aging to bronze-green, have vivid purple undersides. In summer, produces loose sprays of small, pendent, bell-shaped, cream flowers. Z4–8
***H.* 'Tiramisu'** (illus. p.282). Evergreen, clump-forming perennial. H 12–16in (30–40cm), S 12in (30cm). Has rounded, lobed, red-flushed, copper-yellow leaves. In summer, has loose sprays of small, pendent, bell-shaped, pinkish flowers. Z3–8
***H. villosa* 'Palace Purple'**, syn. *H. micrantha* var. *diversifolia* 'Palace Purple', *H.* 'Palace Purple'. Clump-forming perennial. H and S 18–24in (45–60cm). Has persistent, heart-shaped, deep purple leaves and sprays of small, white flowers in summer. Cut leaves last well in water. Z4–9

x HEUCHERELLA

SAXIFRAGACEAE

Hybrid genus (*Heuchera* x *Tiarella*) of evergreen, mainly late spring- and summer-flowering perennials. Excellent for groundcover or edging in a mixed, shrub or herbaceous border, or for a woodland garden. Prefers semishade and needs fertile, well-drained soil. Propagate by basal cuttings in spring or by division in spring or fall. See also feature panel p.282.
x *H. alba* 'Bridget Bloom'. Clump-forming perennial. H 16in (40cm), S 12in (30cm). Has dense, bright green leaves and, in early summer, produces many feathery sprays of tiny, bell-shaped, rose-pink flowers, which continue intermittently until fall. Z5–8
x *H. tiarelloides* illus. p.264. **'Alabama Sunrise'** is a ground-cover perennial. H and S 12in (30cm). Rounded, deeply lobed, red-veined, golden-yellow young leaves fade to bright green and develop orange tints in fall. In early summer, produces feathery sprays of small, bell-shaped, pendent, white flowers.
'Dayglow Pink', H and S 12–16in (30–40cm), has dark-veined, rich green leaves and many feathery sprays of bright pink flowers. **'Heart of Darkness'**, H and S 16in (40cm), has green leaves, each with a large, dark purple central zone surrounded by silver-gray. Bears white flowers. **'Kimono'** (illus. p.282), H 16in (40cm), S 12in (30cm), is vigorous and has very deeply lobed, purple-veined, silvery-purple and green leaves; produces loose sprays of cream flowers. **'Stoplight'** (illus. p.282), H and S 16in (40cm), has red-veined, bright yellow leaves and white flowers. Z5–8

***Hexastylis*.** See *Asarum*.

HIBBERTIA

SYN. CANDOLLEA

DILLENIACEAE

Genus of evergreen trees, shrubs, and twining climbers, grown for their yellow, occasionally pink or white, flowers. Grow in well-drained soil, in full light or semishade. Water freely in summer, less at other times. Provide stems with support. Thin out congested growth in spring. Propagate by semiripe cuttings in late summer.
H. cuneiformis, syn. *Candollea cuneiformis*, illus. p.458.
H. scandens, syn. *H. volubilis*. Vigorous, evergreen shrub, with twining or procumbent, reddish brown stems. H 10–20ft (3–6m), S 5–8ft (1.5–2.5m). Has oblong to lance-shaped, glossy, deep green leaves, 1½–3½in (4–9cm) long. Saucer-shaped, bright yellow flowers, 1½in (4cm) across, are produced mainly in summer. Z12–15 (min. 41°F/5°C)
***H. volubilis*.** See *H. scandens*.

HIBISCUS

MALVACEAE

Genus of evergreen or deciduous shrubs, trees, perennials and annuals, grown for their flowers. requires full sun and humus-rich, well-drained soil. Water container specimens freely when in full growth, moderately at other times. Tip prune young plants to promote bushiness; cut old plants back hard in spring. Propagate by seed in spring; shrubs and trees by greenwood cuttings in late spring or by semiripe cuttings in summer; perennials by division in spring. Whitefly may cause problems.
H. mutabilis (Confederate rose, Cotton rose). Evergreen, erect to spreading shrub or tree. H 6–15ft (2–5m), S 5–8ft (1.5–2.5m). Rounded leaves have 5–7 shallow lobes. From spring to fall bears funnel-shaped, sometimes double, white or pink flowers, 3–4in (7–10cm) across, that age from pink to deep red. Dies back in light frost. Z10–11
H. rosa-sinensis (Chinese hibiscus, Hawaiian hibiscus, Rose of China). Evergreen, rounded, leafy shrub. H 8–15ft (2.5–5m), S 5–10ft (1.5–3m) or more. Ovate, glossy leaves are coarsely serrated. Produces funnel-shaped, bright crimson flowers, 4in (10cm) across, mainly in summer but also in spring and fall. Z14–15. (min. 50–55°F/10–13°C). Many color selections are available, including **'The President'** illus. p.455.
H. schizopetalus (Japanese lantern). Evergreen, upright, spreading, loose shrub. H to 10ft (3m), S 3–5ft (1–1.5m). Has ovate, serrated leaves and, in summer, pendent, long-stalked flowers, 2½in (6cm) across, with deeply fringed, reflexed, pink or red petals. May be trained as a climber. Z13–15
***H. syriacus*.** Deciduous, upright shrub. H 10ft (3m), S 6ft (2m). Has ovate, lobed, deep green leaves and produces large, trumpet-shaped, dark pink flowers, from late summer to midfall. Z5–9. **'Blue Bird'** see *H.s.* 'Oiseau Bleu'. **'Diana'** illus. p.454. **'Oiseau Bleu'** (syn. *H.s.* 'Blue Bird') illus. p.138. **'Red Heart'** illus. p.132. **'Woodbridge'** illus. p.136.
H. trionum (Flower-of-the-hour) illus. p.300.

HIDALGOA

Climbing dahlia

ASTERACEAE/COMPOSITAE

Genus of evergreen, leaf-stalk climbers, grown for their single, dahlia-like flower heads. Requires full light and humus-rich, well-drained soil. Water freely when in full growth, less at other times. Needs support. In spring, thin out crowded stems or cut back all growth to ground level. Propagate by softwood cuttings in spring. Aphids, red spider mite and whitefly may be troublesome.
H. ternata, syn. *H. wercklei*. Moderately vigorous, evergreen, leaf-stalk climber. H 15ft (5m) or more. Ovate leaves are divided into 3, 5 or more, coarsely serrated leaflets. In summer, bears dahlia-like, scarlet flower heads, yellowish in bud. Z11–13
***H. wercklei*.** See *H. ternata*.

HIERACIUM

Hawkweed

ASTERACEAE/COMPOSITAE

Genus of perennials; most are weeds, but *H. lanatum* is grown for its downy foliage and yellow flower heads. Suitable for a large rock garden or wild garden, but may self-seed freely. Needs sun and poor, well-drained soil. Propagate by seed or division in fall or spring.
H. lanatum, syn. *H. welwitschii*, illus. p.277.
***H. welwitschii*.** See *H. lanatum*.

HIMALAYACALAMUS

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
H. falconeri, syn. *Arundinaria falconeri, Drepanostachyum falconeri, Thamnocalamus falconeri* (Noble bamboo). Evergreen, clump-forming bamboo. H to 28ft (9m), S 10ft (3m). Greenish-brown stems have a dark purple ring beneath each node. Has yellowish-green leaves, 4–6in (10–15cm) long, without visible tessellation, and insignificant flower spikes. Z9–11

HIPPEASTRUM

AMARYLLIDACEAE

Genus of bulbs, grown for their huge, funnel-shaped flowers. Often incorrectly cultivated as *Amaryllis*. Mainly frost tender. Requires a position in full sun or partial shade and well-drained soil. Plant large-flowered hybrids in fall, half burying the bulb; after the leaves die away, dry off the bulb until the following fall. Smaller, summer-flowering species should be kept dry while dormant in winter. Propagate by seed in spring or by offsets in spring (summer-flowering species) or fall (large-flowered hybrids). ⓘ All parts may cause mild stomach upset if ingested.
***H.* 'Apple Blossom'** illus. p.414.
H. aulicum, syn. *H. morelianum*, illus. p.414.
***H.* 'Black Pearl'.** Winter-flowering bulb. H 20in (50cm), S 12in (30cm). Has a sturdy stem bearing 4–5 large, funnel-shaped, dark maroon flowers and strap-shaped, semierect, basal leaves that develop with or after the flowers. Z14–15
***H.* 'Bouquet'.** Winter- and spring-flowering bulb with a basal leaf cluster. H 12–20in (30–50cm), S 12in (30cm). Similar to *H. aulicum*, but has very wide, salmon-pink flowers, with deep red veins and red centers. Z14–15
***H.* 'Charisma'.** Winter-flowering bulb. H 12–20in (30–50cm), S 12in (30cm). Produces white flowers, to 8in (20cm) across, that are splashed and edged red. Z10–11
***H.* 'Dancing Queen'.** Winter- to spring-flowering bulb. H 20in (50cm), S 12in (30cm). Has strap-shaped leaves. Sturdy stems bear up to 5 double, trumpet-shaped, white- and red-streaked flowers. Z9–11
***H.* 'Magic Green'.** Winter-flowering bulb. H 12–20in (30–50cm), S 12in (30cm). Produces creamy-white flowers, to 8in

(20cm) across, overlaid with green and thinly edged (and occasionally lined) red. Z9–11
H. morelianum. See *H. aulicum*.
***H.* 'Red Lion'** illus. p.414.
H. reginae (Mexican lily). Summer-flowering bulb. H 20in (50cm), S 12in (30cm). Flower stem produces a head of 2–4 scarlet flowers, each 4–6in (10–15cm) across and with a star-shaped, green mark in the throat. Long, strap-shaped, semierect leaves develop at the base after flowering has finished. Z11–12
***H.* 'Royal Velvet'.** Winter-flowering bulb. H 12–20in (30–50cm), S 12in (30cm). Produces large, deep scarlet-red flowers, 4–6in (10–15cm) across. Z9–11
H. rutilum. See *H. striatum*.
H. striatum, syn. *H. rutilum*. Spring- and summer-flowering bulb. H and S 12in (30cm). Has strap-shaped, semierect, bright green, basal leaves. Up to 4 funnel-shaped flowers have pointed, scarlet petals, each with a central, green stripe. Z14–15 (min. 55–59°F/13–15°C)
***H.* 'Striped'** illus. p.414.
H. vittatum (St. Joseph's lily). Vigorous, spring-flowering bulb. H to 3ft (90cm), S 1ft (30cm). Leaves are broadly strap-shaped, semierect and basal. Sturdy, leafless stem precedes leaves and terminates in a head of 2–6 red-striped, white flowers, each 5–8in (12–20cm) across. Z13–15 (min. 41°F/5°C)

HIPPOCREPIS

Horseshoe vetch, Vetch

PAPILIONACEAE/LEGUMINOSAE

Genus of annuals and perennials, grown for their small, pealike flowers, which are attractive to butterflies. Requires full sun and well-drained soil. Propagate by seed in spring or fall. Self-seeds readily. May be invasive.
H. comosa (Horseshoe vetch) illus. p.373. **'E.R. Janes'** is a vigorous, prostrate, woody-based perennial. H to 3in (8cm), S indefinite. Rooting stems bear small, loose spikes of pealike, yellow flowers from late spring to late summer. Mid-green leaves are divided, with 3–8 pairs of narrowly ovate leaflets. Excellent for crevices in a wall, rock or paving. Z6–9

HIPPOPHAE

ELAEAGNACEAE

Genus of deciduous shrubs and trees, with inconspicuous flowers, grown for their foliage and showy fruits. Separate male and female plants are required in order to obtain fruits. Suitable for coastal areas, where it is wind-resistant and excellent when grown as hedging. Needs sun and is especially useful for poor, dry or very sandy soil. Propagate by softwood cuttings in summer or seed in fall. See also feature panel p.142.

H. rhamnoides (Sea buckthorn; illus. p.142). Deciduous, bushy, arching shrub or small tree. H and S 20ft (6m). Has narrow, gray-green leaves. Tiny, yellow flowers borne in midspring are followed in fall by bright orange berries on female plants. Z3–8. 'Leikora' produces heavy crops of edible, teardrop-shaped, bright orange fruits. 'Pollmix' is a male selection recommended for pollinating 'Leikora'.

HOHERIA

MALVACEAE

Genus of deciduous and evergreen trees and shrubs, sometimes semievergreen, grown for their flowers produced mainly in summer. Where marginally hardy, grow against a south- or west-facing wall. Requires sun or semishade and fertile, well-drained soil. Propagate by semiripe cuttings in summer or by seed in fall.
H. angustifolia, syn. *H. microphylla*, illus. p.85.
***H.* 'Glory of Amlwch'.** Semievergreen, spreading tree. H 22ft (7m), S 20ft (6m). Has long, narrowly ovate, glossy, bright green leaves and a profusion of large, 5-petaled, white flowers from mid- to late summer. Z9–10
H. lyallii, syn. *Plagianthus lyallii*, illus. p.85.
H. microphylla. See *H. angustifolia*.
H. populnea (Lacebark). Evergreen, spreading tree. H 40ft (12m), S 30ft (10m). Bears narrowly ovate, glossy, dark green leaves and produces dense clusters of 5-petaled, white flowers in late summer and early fall. Bark on mature trees is pale brown and white and often flaky. Z9–10
H. sexstylosa (Ribbonwood). Fast-growing, evergreen, upright tree or shrub. H 25ft (8m), S 20ft (6m). Glossy, pale green leaves are narrowly ovate and sharply toothed. Star-shaped, 5-petaled, white flowers are borne in clusters from mid- to late summer. Z9–10. **'Stardust'** bears a profusion of pure white flowers.

HOLBOELLIA

LARDIZABALACEAE

Genus of evergreen, twining climbers, grown mainly for their fine foliage. Both male and female flowers are borne on the same plant. Grow in any well-drained soil, in a position in shade or full light. Propagate by seed in spring or by stem cuttings in late summer or fall.
H. brachyandra. Evergreen climber. H to 15ft (5m). Bears alternate, trifoliate, ovate to elliptic, mid-green leaves to 5in (12cm) long. In summer, produces racemes of 4–8, large, white, fragrant flowers with sepals of female flowers reaching 3–1½in (4cm) long. Z7–11
H. coriacea. Evergreen, twining climber. H to 22ft (7m). Has glossy, mid- to dark green leaves divided into 3 ovate to elliptic leaflets. In early summer, bears racemes of 5–8 fragrant, bell-shaped flowers with sepals of female flowers reddish-purple; white, male flowers have purple lines at bases. Sausage-shaped, light purple fruits sometimes follow. Z10–11
H. latifolia [purple form] illus. p.194; [white form] illus. p.192.

HOLMSKIOLDIA

LAMIACEAE/VERBENACEAE

Genus of one species of evergreen shrub or scrambling climber, grown for its showy flowers. Grow in fertile, well-drained soil in a position in full light. Water freely in growing season, less at other times. Requires tying to supports. Thin out crowded growth in spring or after flowering has finished. Propagate by seed in spring or by softwood or semiripe cuttings in summer. Whitefly and red spider mite may be troublesome.
H. sanguinea (Chinese hat plant, Mandarin's hat plant). Evergreen, scandent shrub. H 10–30ft (3–10m), S 5–10ft (1.5–3m). Leaves are 2–4in (5–10cm) long, ovate and serrated. From summer to fall, bears trumpet-shaped flowers with crimson petals and conspicuous, saucer-shaped, orange-red calyces. Z10–11 (min. 59°F/15°C)

HOLODISCUS

ROSACEAE

Genus of one species of deciduous shrub, grown for its sprays of creamy-white flowers. Needs sun or semishade and any but very dry soil. Propagate by semiripe cuttings in summer.
H. discolor (Ocean spray) illus. p.113.

Homeria ochroleuca. See *Moraea ochroleuca*.
Homoglossum. See *Gladiolus*.

HOMOGYNE

ASTERACEAE/COMPOSITAE

Genus of evergreen perennials, useful for groundcover in rock gardens and woodland. Needs shade and moist soil. Propagate by division in spring or by seed when fresh.
H. alpina (Alpine coltsfoot). Mat-forming, rhizomatous perennial. H 3–6in (8–15cm), S 6in (15cm) or more. Has kidney-shaped, toothed, glossy leaves. In summer, stems, 3–6in (8–15cm) or more long, each bear a daisylike, rose-purple flower head. Z7–11

HOODIA

APOCYNACEAE/ASCLEPIADACEAE

Genus of branching, leafless, perennial succulents with firm, erect, green stems, generally branching from the base. Requires full sun and very well-drained soil. Difficult to cultivate. Water sparingly at all times. Propagate by seed or grafting in spring.
H. bainii. See *H. gordonii*.
H. gordonii, syn. *H. bainii*. Variable, erect, clump-forming, perennial succulent. H 18in (45cm) or more, S 12in (30cm). Green stem is covered with short, spine-tipped tubercles in distorted rows. Often branches into clumps. Produces 5-lobed, flesh-colored to brownish flowers in late summer. Z13–15 (min. 50°F/10°C)

HORDEUM

Barley

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
H. jubatum (Foxtail barley, Squirrel tail grass) illus. p.286.

HORMINUM

LAMIACEAE/LABIATAE

Genus of one species of rhizomatous perennial, suitable for rock gardens. Requires a position in sun and in well-drained soil. Propagate by division in spring or by seed in fall.
H. pyrenaicum (Dragon's mouth, Pyrenean dead nettle). Basal-rosetted perennial. H 8in (20cm), S to 12in (30cm). In summer, produces whorls of nodding, short-stalked, funnel-shaped, blue-purple or white flowers above ovate, leathery, dark green leaves, 3–4in (8–10cm) long. Z6–8

HOSTA

Plantain lily

ASPARAGACEAE

Genus of mostly clump-forming perennials, occasionally rhizomatous or stem-rooting, grown mainly for their decorative foliage. Forms large clumps that are excellent for groundcover (heights given are those of foliage). Most species prefer shade and rich, moist but well-drained, neutral soil. Propagate by division in early spring. Seed-raised plants (except of *H. ventricosa*) very rarely come true to type. Slug and snail control is essential. See also feature panel pp.272–73.
H. albomarginata. See *H. sieboldii* 'Paxton's Original'.
***H.* 'Allan P. McConnell'** (illus. p.273). Clump-forming perennial. H 6–8in (15–20cm), S 12–18in (30–45cm). Has broadly to narrowly ovate, olive-green leaves with narrow, white margins. In midsummer, produces bell-shaped, purple flowers on scapes 14–16in (35–40cm) long. Z3–9
***H.* 'American Halo'.** Robust, densely mounded, clump-forming perennial. H 22in (55cm), S 5ft (1.5m). Has large, broadly ovate, strongly veined, dark blue-green leaves, with heart-shaped bases and wide, irregular, yellow margins fading to ivory-white with age. Scapes, 2ft (60cm) long, bear broadly funnel-shaped, white flowers in early and mid-summer. Z3–8
***H.* 'Antioch'** (illus. p.272). Robust, clump-forming perennial. H 20in (50cm), S 3ft (90cm). Has broadly ovate, matte, dark green leaves irregularly margined gray-green and creamy-yellow, fading to white. In midsummer, bears funnel-shaped, lavender-blue flowers on scapes 3ft (90cm) long. Z3–9
***H.* 'Argentea Variegata'.** See *H. undulata* var. *undulata*.
***H.* 'August Moon'** (illus. p.273). Vigorous, clump-forming perennial. H 20in (50cm), S 30in (75cm). Has rounded to heart-shaped, cupped, puckered, pale green leaves becoming golden-yellow with a faint glaucous bloom. In summer, bears bell-shaped, grayish-white flowers on scapes 3ft (90cm) long. Z3–9
***H.* 'Big Daddy'.** Clump-forming perennial. H 2ft (60cm), S 3ft (1m). Has rounded to heart-shaped, cupped, deeply puckered, glaucous, gray-blue leaves. Bears bell-shaped, grayish-white flowers on leafy scapes 32in (80cm) long in early summer. Z3–8
***H.* 'Birchwood Parky's Gold'**, syn. *H.* 'Golden', *H.* 'Golden Nakaiana' (illus. p.273). Vigorous, clump-forming perennial. H 14–16in (35–40cm), S indefinite. Has heart-shaped, matte, yellow-green leaves becoming rich yellow with age. In midsummer, bears bell-shaped, pale lavender-blue flowers on scapes 28in (70cm) long. Z3–9

***H.* 'Blue Angel'.** Slow-growing, clump-forming perennial. H 14in (35cm), S 2ft (60cm). Has ovate to heart-shaped, wavy, glaucous, bluish-gray leaves. In mid-summer, bears bell-shaped, grayish- or mauvish-white flowers on scapes 3ft (1m) long. Z3–8

***H.* 'Blue Cadet'.** Clump-forming perennial. H 14–16in (35–40cm), S 30in (75cm). Has small, broadly ovate leaves, blue-green above and glaucous beneath, with heart-shaped bases. Produces funnel-shaped, rich lavender flowers in long, dense scapes, 22in (55cm) long, from mid- to late summer. Z3–8

***H.* 'Blue Moon'.** Slow-growing, compact, clump-forming perennial. H 5in (12cm), S 12in (30cm). Ovate to rounded, grayish-blue leaves taper to a point. In midsummer, dense clusters of trumpet-shaped, mauve flowers, on scapes 8–10in (20–25cm) long, are borne just above leaves. Suitable for a rock garden. Prefers partial shade. Z3–9

***H.* 'Blue Mouse Ears'.** Slow-growing, clump-forming perennial. H 6in (15cm), S 12in (30cm). Has very small, shallowly cupped, ovate, rich blue-green leaves, in mature plants almost round. Bears clusters of bell-shaped, lavender-striped, rich violet flowers, on scapes 8in (20cm) long, in mid- and late summer. Z3–8

***H.* 'Blue Wedgwood'** (illus. p.273). Slow-growing, clump-forming perennial. H 1ft (30cm), S 1½ft (45cm). Has wedge-shaped, deeply quilted, blue leaves and, in summer, produces lavender flowers on scapes 16in (40cm) long. Z3–9

***H.* 'Brim Cup'.** Slow-growing, clump-forming perennial. H 12in (30cm), S 14–16in (35–40cm). Erect, heart-shaped, slightly cupped and puckered, thick, dark green leaves are irregularly margined with cream fading to white. Bears pale lavender-blue flowers, on scapes 18in (45cm) long, in summer. Z3–9

***H.* 'Buckshaw Blue'.** Slow-growing, clump-forming perennial. H 14in (35cm), S 2ft (60cm). Has ovate to heart-shaped, concave, puckered, glaucous, deep blue-green leaves. In early summer, bears bell-shaped, grayish-white flowers on scapes to 18in (45cm) long. Z3–8

***H.* 'Candy Hearts'.** Vigorous, clump-forming perennial. H 14–16in (35–40cm), S 22in (55cm). Has heart-shaped, pointed, greenish-gray-blue leaves. In summer, bears bell-shaped, pale lavender-blue to off-white flowers on scapes to 20in (50cm) long. Z3–8

***H.* 'Cherry Berry'** (illus. p.272). Mounded, clump-forming perennial. H 12in (30cm), S 2ft (60cm). Has broadly lance-shaped, creamy-yellow leaves, becoming ivory-white, with broad, irregular, green margins. In mid- to late summer, bears funnel-shaped, deep purple flowers on red scapes 18in (45cm) long. Z3–9

***H.* 'Cream Delight'.** See *H. undulata* var. *undulata*.

H. decorata, syn. *H.* 'Decorata'. Stoloniferous perennial. H 12in (30cm), S 18in (45cm). Ovate to rounded, dark green leaves have white margins. Dense racemes of trumpet-shaped, deep violet, sometimes white flowers, on scapes to 20in (50cm) long, are borne in midsummer. Z3–9.

f. *normalis* has plain green leaves.

***H.* 'Devon Green'** (illus. p.272). Clump-forming perennial. H 18in (45cm), S 16in (40cm). Red-spotted leaf stalks bear lance-shaped, glossy, dark green leaves maturing to broadly ovate to heart-shaped. In midsummer, bears bell-shaped, grayish-lavender-blue flowers on scapes to 18in (45cm) long. Z3–9

***H.* 'Dream Weaver'** (illus. p.273). Vigorous, clump-forming perennial. H 18in (45cm), S 3ft (90cm). Has large, broadly ovate, strongly-ribbed, chartreuse-green leaves, later ivory-white in the center, with very broad, dark blue-green margins, glaucous beneath. Produces funnel-shaped, lavender-striped, white flowers, on scapes to 28in (70cm) long, in mid- and late summer. Z3–9

***H.* 'Eldorado'.** See *H.* 'Frances Williams'.

***H.* 'Fire and Ice'** (illus. p.273). Upright, mounding, clump-forming perennial. H 8in (20cm), S 12in (30cm). Has small, narrowly ovate, ivory to white leaves, irregularly margined dark green, with twisted, acute tips. Produces narrowly funnel-shaped, pale lavender flowers on scapes, 20in (50cm) long, in mid- and late summer. Z3–9

***H.* 'Fire Island'** Clump-forming perennial. H 10in (25cm), S 18in (45cm). Bright red stems bear ovate, puckered, bright yellow leaves becoming greener as they mature, the red stem coloring seeping into the leaf blade. In midsummer, has bell-shaped, lavender flowers on scapes 20in (50cm) long. Z3–8

***H. fluctuans* 'Variegated'.** See *H.* 'Sagae'.

H. fortunei. Group of vigorous, clump-forming, hybrid perennials. H 2½–3ft (75cm–1m), S 3ft (1m) or more. Leaves are ovate to heart-shaped. Bears funnel-shaped, mauve flowers in midsummer. Z3–9. **'Albopicta'** see *H.f.* var. *albopicta*.

var. *albopicta* (syn. *H.f.* 'Albopicta') has pale green leaves, with creamy-yellow centers, fading to dull green from midsummer. Racemes of trumpet-shaped, pale violet flowers on scapes, 30in (75cm) long, open above foliage in early summer.

var. *aureomarginata* (syn. *H.f.* 'Aureomarginata', *H.f.* 'Yellow Edge', *H.* 'Obscura Marginata') has mid-green leaves with irregular, creamy-yellow edges. In midsummer, trumpet-shaped, violet flowers on scapes, 30in (75cm) long, are borne in racemes above foliage. Mass planting looks very effective. Tolerates full sun. **'Yellow Edge'** see *H.f.* var. *aureomarginata*.

***H.* 'Fragrant Bouquet'** (illus. p.273). Mounded, clump-forming perennial. H 18in (45cm), S 26in (65cm). Produces heart-shaped, slightly puckered, slightly wavy, chartreuse leaves edged in cream. In late summer, large, fragrant, flared, very pale lavender flowers are borne on scapes 3ft (90cm) long. Z3–9

***H.* 'Francee'.** Vigorous, clump-forming perennial. H 22in (55cm), S 3ft (1m). Has ovate to heart-shaped, slightly cupped and puckered, olive-green leaves with irregular, white margins. In summer, arching, leafy scapes, 28in (70cm) long, bear funnel-shaped, lavender-blue flowers. Late to emerge. Z3–9

***H.* 'Frances Williams'**, syn. *H.* 'Eldorado', *H. sieboldiana* 'Frances Williams', *H. sieboldiana* 'Yellow Edge' (illus. p.273). Clump-forming perennial. H 2ft (60cm), S 3ft (1m). Has heart-shaped, cupped, very puckered, thick, glaucous, blue-green leaves, with wide, irregular, green-yellow margins. In early summer, bears bell-shaped, grayish-white flowers on gray-green scapes, 26in (65cm) long. Z3–9

***H.* 'Ginko Craig'** (illus. p.273). Low-growing, clump-forming perennial. H and S 1ft (30cm). Has small, narrow, dark green leaves irregularly margined white. In summer, produces spikes of bell-shaped, deep mauve flowers on scapes 22in (55cm) long. A good edging plant. Z3–9

***H.* 'Gold Edger'** (illus. p.272). Densely mounded, clump-forming perennial. H to 12in (30cm), S 12in (30cm) or more. Has heart-shaped, matte, golden-yellow leaves that fade to chartreuse with age. In late summer, produces bell-shaped, lavender flowers on scapes to 12in (30cm) long. Z3–9

***H.* 'Golden'.** See *H.* 'Birchwood Parky's Gold'.

***H.* 'Golden Nakaiana'.** See *H.* 'Birchwood Parky's Gold'.

***H.* 'Golden Prayers'** (illus. p.273). Upright, clump-forming perennial. H 6in (15cm), S 12in (30cm). Cupped leaves are puckered and bright golden-green. Flowers on scapes, 18in (45cm) long, are white suffused with pale lavender. Suits a rock garden. Z3–9

***H.* 'Golden Tiara'** (illus. p.273). Clump-forming perennial. H 6in (15cm), S 12in (30cm). Neat, broadly heart-shaped, dark green leaves have well-defined, chartreuse-yellow margins. In summer, produces long spikes of lavender-purple flowers on scapes 2ft (60cm) long. Z3–9

***H.* 'Gold Standard'.** Vigorous, clump-forming perennial. H 2½ft (75cm), S 3ft (1m). Ovate to heart-shaped leaves are pale green, turning to gold from midsummer, with narrow, regular, dark green margins. Racemes of trumpet-shaped, violet flowers on scapes, 3½ft (1.1m) long, are produced above leaves in midsummer. Best in partial shade. Z3–9

***H. gracillima*.** Clump-forming perennial. H 2in (5cm), S 7in (18cm). Has lance-shaped, wavy-margined, glossy, deep green leaves, paler beneath. From summer to fall, purple-dotted scapes, 10in (25cm) long, bear widely funnel-shaped, lavender-blue flowers, striped purple within. Z3–8

***H.* 'Grand Tiara'.** Vigorous perennial forming a compact mound. H 12in (30cm), S 20in (50cm). Has ovate to heart-shaped, mid-green leaves with irregular, wide, yellow margins. In summer, produces bell-shaped, sometimes remontant, deep purple flowers, each striped lavender-blue within, on scapes 32in (80cm) long. Z3–9

***H.* 'Great Expectations'** (illus. p.273). Clump-forming perennial. H 22in (55cm), S 34in (85cm). Green-margined, white leaf stalks bear heart-shaped, stiff, puckered, thick leaves that are glaucous, blue-green, and irregularly but widely splashed with yellow, fading to white in the centers. In early summer, bell-shaped, grayish-white flowers are borne on leafy scapes, 28in (70cm) long. Z3–9

***H.* 'Green Fountain'.** Clump-forming perennial. H 2ft (60cm), S 18in (45cm). Red-dotted leaf stalks bear arching, lance-shaped, wavy-margined, glossy, mid-green leaves. Funnel-shaped, pale mauve flowers are borne in summer, on scapes 2ft (60cm) long. Z3–9

***H.* 'Ground Master'** (illus. p.272). Vigorous, stoloniferous, prostrate perennial. H 10in (25cm), S 22in (55cm). Has ovate to lance-shaped, matte, olive-green leaves with wavy, irregular, creamy margins, fading to white. In summer, bears straight, leafy scapes, 2ft (60cm) long, of funnel-shaped, purple flowers. Z3–9

***H.* 'Guacamole'.** Vigorous, clump-forming perennial. H 18in (45cm), S 26in (65cm). Bold, heart-shaped, slightly wavy, soft gold leaves are irregularly edged in green. In midsummer, has flared, very pale lavender flowers on scapes 34in (85cm) long. Leaves color best in good light. Z3–9

***H.* 'Hadspen Blue'** (illus. p.272). Slow-growing, clump-forming perennial. H and S 12in (30cm). Smooth leaves are heart-shaped and deep glaucous blue. Produces short spikes of lavender flowers, on scapes 14in (35cm) long, in summer. Z3–9

***H.* 'Halcyon'**, syn. *H.* 'Holstein' (illus. p.272). Robust, clump-forming perennial. H 1ft (30cm), S 3ft (1m). Has heart-shaped, tapering, grayish-blue leaves that fade to muddy-green in full sun; texture may be spoiled by heavy rain. Heavy clusters of trumpet-shaped, violet-mauve flowers, on scapes 18in (45cm) long, open just above foliage in midsummer. Z3–9

***H.* 'Holstein'.** See *H.* 'Halcyon'.

***H.* 'Honeybells'.** Clump-forming perennial. H 3ft (1m), S 2ft (60cm). Light green leaves are blunt at the tips and have wavy margins. In late summer, bears fragrant, white, sometimes lavender-blue flowers on 3½ft (1.1m) long scapes. Z3–9

***H.* 'Hydon Sunset'.** Densely mounded, clump-forming perennial. H and S to 2ft (60cm). Has heart-shaped leaves, bright gold in spring, turning mid-green by late summer. In late summer, produces bell-shaped, purple flowers on scapes to 2ft (60cm) long. Z3–9

***H. hypoleuca*.** Clump-forming perennial. H 1½ft (45cm), S 3ft (1m). Broadly ovate leaves have widely spaced veins and are pale green above, striking white beneath. In late summer, bears trumpet-shaped, milky-violet flowers, on pendent scapes 14in (35cm) long, with mauve-flecked, pale green bracts. Tolerates full sun. Z3–8

***H.* 'Inniswood'.** Densely mounding, clump-forming perennial. H 2ft (60cm), S 3ft (90cm). Has large, broadly ovate to rounded, heart-shaped, seersuckered, rich golden-yellow leaves, with somewhat glaucous, dark green leaves. In mid-summer, bears funnel-shaped, pale lavender flowers on scapes 30in (75cm) long. Z3–8

***H.* 'Invincible'** (illus. p.272). Densely mounded, clump-forming perennial. H and S to 2ft (60cm). Has heart-shaped, long-tipped, leathery, glossy, olive-green leaves. In late summer produces slightly fragrant, funnel-shaped, pale lavender to white flowers on scapes to 2ft (60cm) long. Z3–9

***H.* 'June'** (illus. p.272). Dense, clump-forming perennial. H 15in (38cm), S 28in (70cm). Has heart-shaped, smooth, gray-blue leaves irregularly splashed in centers with yellow and yellowish-green.

Bell-shaped, lavender-gray flowers, on 18in (45cm) scapes, are borne in summer. A sport of *H.* 'Halcyon'. Z3–9

***H.* 'Kabitan'.** See *H. sieboldii* var. *sieboldii* f. *kabitan*.

H. kikutii*.** Clump-forming perennial. H 16in (40cm), S 2ft (60cm). Has ovate to lance-shaped, deeply veined, dark green leaves. Tight bunches of bell-shaped, near-white flowers are borne on conspicuously leaning scapes, 2ft (60cm) long, in summer. Z3–9. **var. *caput-avis is smaller. The flower bud resembles a bird's head.

***H.* 'Krossa Regal'.** Vase-shaped, clump-forming perennial. H and S 3ft (1m). Arching, deeply ribbed leaves are grayish-blue. Produces long spikes of pale lilac flowers, on scapes 4½ft (1.4m) long, in summer. Tolerates sun. Z3–9

H. lancifolia (illus. p.273). Clump-forming perennial. H 18in (45cm), S 30in (75cm). Arching, narrowly lance-shaped, glossy, dark green leaves overlap neatly into a dense mound. Bell-shaped, lavender flowers, on scapes 26in (65cm) long, are produced in late summer. Z3–9

***H.* 'Lemon Lime'.** Vigorous, clump-forming perennial. H 6in (15cm), S 18in (45cm). Has small, lance-shaped, wavy, thin, yellow-green to yellow leaves. In summer, produces remontant, bell-shaped, white-striped purple flowers on scapes 12in (30cm) long. Z3–8

***H.* 'Love Pat'.** Vigorous, clump-forming perennial. H and S to 2ft (60cm). Produces rounded, deeply puckered, deep glaucous-blue leaves. Bears racemes of off-white flowers, on scapes 22in (55cm) long, during summer. Z3–9

***H.* 'Mediovariegata'.** See *H. undulata* var. *undulata*.

***H.* 'Minuteman'** (illus. p.272). Clump-forming perennial. H 30in (75cm), S 2ft (60cm). Has ovate, slightly wavy-rimmed, white-margined, dark green leaves. From early to midsummer, produces funnel-shaped, lavender-blue flowers on scapes 30in (75cm) long. Z3–9

***H. montana*.** Vigorous, clump-forming perennial. H 3½ft (1.1m), S 3ft (1m). Has ovate, prominently veined, glossy, dark green leaves. Racemes of trumpet-shaped, pale violet to white flowers, on scapes 3ft (90cm) long, open well above foliage in midsummer. Z3–9. **'Aureomarginata'** is slower growing and has leaves irregularly edged with golden-yellow. Always the first hosta to emerge in spring.

***H.* 'Moonlight'.** Clump-forming perennial. H 20in (50cm), S 28in (70cm). Has pale yellow leaves that emerge olive-green, narrowly margined white. Produces funnel-shaped, violet-budded, pinkish-lavender flowers, on 28in (70cm) scapes, in midsummer. Needs full shade. Z3–9

***H.* 'Morning Light'.** Clump-forming perennial, forming upright mounds of foliage. H 18in (45cm), S 28in (70cm). Has ovate, long-pointed, rich ivory-yellow leaves, with irregular, dark green margins. Bears narrowly funnel-shaped, lavender flowers, on scapes to 28in (70cm) long, in midsummer. Z3–9

***H.* 'Night Before Christmas'** (illus. p.272). Clump-forming perennial. H 2ft (60cm), S 5ft (1.5m). Large, ovate, slightly wavy, rich dark green leaves are each boldly splashed with a central, bright white flash. Has narrowly funnel-shaped, lavender flowers, on scapes 3ft (90cm) long, in midsummer. Z3–9

H. nigrescens (illus. p.272). Vigorous, clump-forming perennial. H 28in (70cm), S 26in (65cm). Has ovate to heart-shaped, concave, puckered, glaucous gray-green leaves. In late summer, bears racemes of funnel-shaped, pearl-gray to white flowers, on undulating scapes 4½ft (1.4m) long. Z3–9

***H.* 'Obscura Marginata'.** See *H.f.* var. *aureomarginata*.

***H.* 'Paxton's Original'.** See *H. sieboldii* 'Paxton's Original'.

***H.* 'Piedmont Gold'.** Slow-growing, clump-forming perennial. H 2ft (60cm), S 2½ft (75cm). Smooth leaves are bright yellowish-green with fluted margins. Racemes of white flowers, on scapes to 26in (65cm) long, are produced in summer. Best in light shade. Z3–9

H. plantaginea. Lax, clump-forming perennial. H 2ft (60cm), S 4ft (1.2m). Leaves are ovate and glossy, pale green. Rising well above these are scapes, to 26–30in (65–75cm) long, crowned in late summer and early fall with fragrant, trumpet-shaped, white flowers that open in the evening. Prefers sunny conditions. Z3–9. **var. *japonica*** (syn. *H.p.* var. *grandiflora*) has wavy leaves and larger, longer-tubed flowers, to 5in (13cm) long. **var. *grandiflora*** see *H.p.* **var. *japonica***.

H. rectifolia. Upright, clump-forming perennial. H 3ft (1m), S 2½ft (75cm). Produces ovate to lance-shaped, dark green leaves and racemes of large, trumpet-shaped, violet flowers, to 24–30in (60–75cm) long, from mid- to late summer. Z3–9

***H.* 'Regal Splendor'** (illus. p.272). Clump-forming perennial. H and S 3ft (1m). Arching, grayish-blue leaves are suffused white or yellow at the margins. Lilac flowers, on scapes 4½ft (1.4m) long, are produced in summer. Z3–9

***H.* 'Remember Me'** (illus. p.273). Densely mounded, clump-forming perennial. H 16in (40cm), S 12in (30cm). Has narrowly ovate, ivory-white to creamy-yellow leaves with irregular, blue-green margins. Tubular, lavender-blue flowers are borne on 16in (40cm) scapes in midsummer. Z3–9

***H.* 'Revolution'** (illus. p.273). Clump-forming perennial. H 20in (50cm), S 3½ft (1.1m). Ivory-white leaf stalks, finely outlined dark green, bear broadly ovate, wavy, lustrous, green-flecked, ivory-cream leaves, margined and splashed dark green and overlaid with light olive-green. In midsummer, has narrowly funnel-shaped, lavender-blue flowers on scapes 20in (50cm) long. Z3–9

***H.* 'Royal Standard'.** Upright, clump-forming perennial. H 2ft (60cm), S 4ft (1.2m). Broadly ovate leaves are glossy, pale green. Pure white, slightly fragrant, trumpet-shaped flowers, to 3ft (1m) long, are borne well above the foliage and open in the evening. Prefers sun. Z3–9

***H.* 'Sagae'**, syn. *H. fluctuans* 'Variegated' (illus. p.273). Semierect, clump-forming perennial. H 2½ft (75cm), S 5ft (1.5m). Very large, roughly triangular, dark green leaves have gold edges which fade to cream or white. Flared, violet-tinged, white flowers are borne, on scapes 4ft (1.2m) long, in midsummer. Z3–9

***H.* 'Sea Thunder'.** Vigorous, dense-mounding, clump-forming perennial. H 16–20in (40–50cm), S 3ft (1m). Has narrowly ovate, ivory-cream leaves, irregularly margined dark olive-green, often with intrusions of olive-green toward the center. Produces broadly funnel-shaped, purple flowers, on scapes 3ft (90cm) long, in late summer. Z3–8

***H.* 'September Sun'** (illus. p.273). Vigorous, clump-forming perennial. H 26in (65cm), S 3ft (1m). Has ovate to heart-shaped, flat, lime-green to yellow leaves, irregularly edged in dark green; the variegation develops as the leaves mature. In summer, scapes, 30in (75cm) long, bear bell-shaped, pale lavender-blue flowers. Thrives in sun or partial shade. Z3–8

***H.* 'Shade Fanfare'.** Vigorous, clump-forming perennial. H 1½ft (45cm), S 2½ft (75cm). Heart-shaped leaves are pale green with cream margins. In summer, has an abundance of lavender-blue flowers on scapes 2ft (60cm) long. Z3–8

H. sieboldiana (illus. p.272). Robust, clump-forming perennial. H 3ft (1m) or more, S 5ft (1.5m). Large, heart-shaped, deeply ribbed, puckered leaves are bluish-gray. Racemes of trumpet-shaped, very pale lilac flowers, on scapes 2ft (60cm) long, open in early summer, just above the foliage. Good groundcover. Tolerates sun, but leaves may then turn dull green. Z3–9. **var. *elegans*** has larger, bluer leaves and scapes 28in (70cm) long. **'Frances Williams'** see *H.* 'Frances Williams'. **'Yellow Edge'** see *H.* 'Frances Williams'.

***H. sieboldii*.** Vigorous, clump-forming perennial. H 12in (30cm), S 2ft (60cm). Has broadly lance-shaped, blunt-tipped, flat, matte, olive-green leaves, thinly and irregularly margined white. Produces funnel-shaped, deep violet flowers, striped purple and white within, on leafy scapes, 20in (50cm) long, in late summer and early fall. Z3–8. **'Kabitan'** see *H.s.* var. *seiboldii* f. *kapitan*. **f. kapitan** see *H.s.* var. *seiboldii* f. *kapitan*. **'Paxton's Original'** (syn. *H. albomarginata, H.* 'Paxton's Original'), H 1½ft (45cm), is vigorous, and has round-tipped, mid- to dark green leaves with irregular, white margins. Bears violet flowers in late summer, followed by egg-shaped, glossy, dark green, then brown seed heads, useful for flower arrangements. **var. *sieboldii* f. kabitan** (syn. *H.* 'Kabitan', *H.s.* f. *kapitan*), has lance-shaped, thin, glossy leaves with yellow centers and thin, wavy, dark green margins. In early summer, produces small, trumpet-shaped, pale violet flowers on scapes 12–16in (30–40cm) long. Suitable for a shaded rock garden. Needs establishing in a container for the first few years.

***H.* 'Snowden'.** Clump-forming perennial. H and S 3ft (1m) or more. Has large, pointed, glaucous, blue leaves that age to sage-green. Long stems produce white flowers tinged with green, on thick scapes, 3ft (1m) long, during summer. Z3–9

***H.* 'So Sweet'** (illus. p.273). Clump-forming perennial. H 14in (35cm), S 22in (55cm). Has ovate to lance-shaped, glossy, mid-green leaves margined creamy-white. In mid- and late summer, lavender-blue buds open to fragrant, funnel-shaped, purple-striped, white flowers on scapes 2ft (60cm) long. Z3–9

***H.* 'Stiletto'.** Vigorous, clump-forming perennial. H 6in (15cm), S 8in (20cm). Has lance-shaped, rippled, mid-green leaves margined creamy-white. In summer, bears funnel-shaped, purple-striped, lavender-blue flowers on scapes 12in (30cm) long. Z3–8

***H.* 'Striptease'.** Densely mounding, clump-forming perennial. H 20in (50cm), S 4ft (1.2m). Has narrowly ovate leaves, dark green leaves, glaucous beneath, with chartreuse-green centers, sometimes white-flecked, later ivory-yellow. Produces funnel-shaped, violet then lavender flowers on scapes, 28in (70cm) long, in midsummer. Z3–8

***H.* 'Sum and Substance'.** Vigorous, clump-forming perennial. H and S to 3ft (1m). Produces large, greenish-gold leaves that are thick in texture and, in mid-summer, pale lavender flowers on scapes 3ft (1m) long. Tolerates full sun. Z3–8

***H.* 'Suzuki Thumbnail'**, syn. *H. venusta* 'Suzuki Thumbnail'. Compact, mound-forming perennial. H 3in (8cm), S 6in (15cm). Has small, ovate to heart-shaped, mid- to dark green leaves. Bears racemes of trumpet-shaped, purple flowers, on scapes well above the foliage, in midsummer. Z3–8

***H.* 'Tall Boy'.** Clump-forming perennial. H and S 2ft (60cm). Has large, bright green, long-pointed leaves. In late summer, an abundance of rich lilac flowers is produced on scapes 4ft (1.2m) long or more. Z3–9

***H. tardiflora*.** Slow-growing, clump-forming perennial. H 1ft (30cm), S 2½ft (75cm). Has narrowly lance-shaped, thick-textured, dark green leaves. Dense spikes of trumpet-shaped, lilac-purple flowers, on scapes 14in (35cm) long, open just above the foliage in fall. Z3–9

***H.* 'Tattoo'** (illus. p.273). Clump-forming perennial. H 12in (30cm), S 18in (45cm). Broadly ovate, slightly puckered, pale green leaves each have a maple-leaf-shaped, gold center edged in darker green. Bears bell-shaped, lavender flowers, on scapes 18in (45cm) long, in midsummer. Z3–9

***H.* 'Thomas Hogg'.** See *H. undulata* var. *albomarginata*.

H. tokudama*.** Very slow-growing, clump-forming perennial. H 1½ft (45cm), S 2½ft (75cm). Has cup-shaped, puckered, blue leaves. Racemes of trumpet-shaped, pale lilac-gray flowers, on scapes 16in (40cm) long, are borne just above foliage in midsummer. Z3–9. **f. *aureo-nebulosa (syn. *H.t.* 'Aureonebulosa', *H.t.* 'Variegata') illus. p.274. **f. *flavocircinalis***, often mistaken for a juvenile *H.* 'Frances Williams', has heart-shaped leaves with wide, irregular, creamy-yellow margins. **'Variegata'** see *H.t.* f. *aureo-nebulosa*.

***H.* 'Torchlight'.** Clump-forming perennial. H 14in (35cm), S 34in (85cm). Strongly red-streaked leaf stalks bear ovate, slightly folded, wavy, smooth, dark olive-green leaves lightly streaked chartreuse, with irregular, ivory margins. Funnel-shaped, rich lavender-blue flowers, on scapes 30in (75cm) long, are produced in late summer. Z3–9

H. undulata* var. *undulata, syn. *H.* 'Argentea Variegata', *H.* 'Cream Delight', *H.* 'Mediovariegata', *H.* 'Undulata', *H.* 'Variegata'. Clump-forming perennial. H to 3ft (1m), S 18in

(45cm). Has lance-shaped to elliptic or narrowly ovate, slightly pointed, twisted, deeply channeled, mid-green leaves that are thin but leathery and strongly wavy-margined, with central, white or pale yellowish-white markings. Funnel-shaped, mauve flowers, on arching leaf scapes, 20–32in (50–80cm) long, are produced in early and mid-summer. Z3–9.
var. *albomarginata* (syn. *H.u.* var. *undulata* 'Albomarginata', *H.* 'Thomas Hogg'), H 22in (55cm), S 2ft (60cm), has broadly ovate, flat or slightly wavy-margined, dark green leaves, with irregular, cream or pale yellow margins.
var. *erromena*, H 1½ft (45cm), S 2ft (60cm), is robust and bears broadly ovate, tapering, matte, mid-green leaves.
var. undulata 'Albomarginata' see *H.u.* var. *albomarginata*. **var. *univittata***, H 18in (45cm), S 28in (70cm), has ovate, twisted, matte, olive-green leaves with slender, cream centers.
***H.* 'Undulata'.** See *H. undulata* var. *undulata*.
***H.* 'Variegata'.** See *H. undulata* var. *undulata*.
***H. ventricosa*.** Clump-forming perennial. H 28in (70cm), S 3ft (1m) or more. Has heart-shaped to ovate, slightly wavy-margined, glossy, dark green leaves. Racemes of bell-shaped, deep purple flowers, on scapes 32–36in (80–100cm) long, are produced above foliage in late summer. Usually comes true from seed. Z3–9. **'Aureomarginata'** (syn. *H.v.* 'Variegata') produces leaves with irregular, cream margins. **'Variegata'** see *H.v.* 'Aureomarginata'.
***H. venusta*.** Vigorous, mat-forming perennial. H 1in (25cm), S to 12in (30cm). Has ovate to lance-shaped, mid- to dark green leaves. Abundant, trumpet-shaped, purple flowers, on scapes 10–14in (25–35cm) long, are borne well above foliage from midsummer to midfall. Suitable for a rock garden. Z3–9. **'Suzuki Thumbnail'** see *H.* 'Suzuki Thumbnail'.
***H.* 'Vera Verde'** (illus. p.273)**.** Stoloniferous perennial. H 6in (15cm), S 14–16in (35–40cm). Has lance-shaped, flat, olive-green leaves, narrowly edged cream. In summer, bears funnel-shaped, purple-striped, pale mauve flowers on scapes 12in (30cm) long. Z3–8
***H.* 'Whirlwind'** (illus. p.273). Clump-forming perennial. H 17in (43cm), S 34in (85cm). Has ovate to heart-shaped, folded, twisted and pointed, white to yellowish-green leaves, with wide, dark green margins. Funnel-shaped, lavender-blue flowers, on scapes 2ft (60cm) long, are produced in mid- and late summer. Z3–9
***H.* 'Wide Brim'.** Vigorous, clump-forming perennial. H and S to 2½ft (75cm). Leaves are heavily puckered and dark blue-green, with wide, irregular, creamy-white margins. Produces white or very pale lavender flowers, on scapes 22in (55cm) long, in summer. Z3–9
***H.* 'Yellow River'.** Clump-forming perennial. H 22in (55cm), S 3ft (1m). Has ovate to heart-shaped, pointed, thick, dark green leaves with irregular, yellow margins. Leafy scapes, 3ft (1m) long, of funnel-shaped, very pale lavender-blue flowers are produced in early summer. Z3–9
***H.* 'Zounds'.** Slow-growing, clump-forming perennial. H and S to 3ft (1m). Large, bright gold leaves are corrugated and have a metallic sheen. White or pale lavender flowers, on scapes 2ft (60cm) long, are produced in early summer. Z3–9

HOTTONIA

PRIMULACEAE

Genus of deciduous, perennial, submerged water plants, grown for their handsome foliage and delicate, primula-like flowers. Needs sun and clear, cool, still water. Periodically thin overcrowded growth. Propagate by division or stem cuttings in spring.
H. palustris (Water violet) illus. p.435.

***Houstonia serpyllifolia*.** See *Hedyotis michauxii*.

HOUTTUYNIA

SAURURACEAE

Genus of one species of perennial, deciduous marginal water plant, with far-spreading rhizomes. Suitable for ground-cover, although invasive. Prefers position in semishade and moist soil or shallow water, beside streams and ponds. Propagate by runners in spring.
***H. cordata* 'Chameleon'**, syn. *H.c.* 'Tricolor', illus. p.444. **'Flore Pleno'** (syn. *H.c.* 'Plena') is a spreading perennial. H 6–24in (15–60cm), S indefinite. In spring, bears spikes of insignificant flowers, surrounded by 8 or more ovate, white bracts, above aromatic, fleshy, leathery, heart-shaped, pointed leaves. **'Plena'** see *H.c.* 'Flore Pleno'. **'Tricolor'** see *H.c.* 'Chameleon'. Z6–11

HOVENIA

RHAMNACEAE

Genus of deciduous, summer-flowering trees, grown mainly for their fragrant flowers and small fruits. Young, unripened growth is susceptible to frost damage. Does best in a position in full sun and requires fertile, well-drained soil. Propagate by softwood cuttings in early summer or by seed in fall.
H. dulcis (Raisin-tree) illus. p.74.

HOWEA

SYN. HOWEIA, KENTIA
Sentry palm

ARECACEAE/PALMAE

Genus of evergreen palms, grown for their ornamental appearance. Needs full sun or partial shade and humus-rich, well-drained soil. Water container-grown specimens moderately when in growth, and minimally in winter. Propagate by seed in spring at 79°F (26°C). Prone to red spider mite.
H. forsteriana, syn. *Kentia fosteriana* (Paradise palm, Thatch-leaf palm). Evergreen, upright palm with a slender stem. H 30ft (10m), S 10–12ft (3–4m). Has spreading, feather-shaped leaves, 5–8ft (1.5–2.5m) long, made up of strap-shaped leaflets. Branching clusters of several spikes of small, greenish-brown flowers are borne in winter. Z11–12 (min. 59°F/15°C)

***Howeia*.** See *Howea*.

HOYA

Wax flower

APOCYNACEAE/ASCLEPIADACEAE

Genus of evergreen, climbing and shrubby perennials, grown for their flowers and foliage. Grow in humus-rich, well-drained soil with semishade in summer. Water moderately when in full growth, sparingly at other times. Stems require support. Cut back and thin out crowded stems after flowering or in spring. Propagate by semiripe cuttings in late summer.
H. australis, syn. *H. darwinii* of gardens. Moderately vigorous, evergreen, woody-stemmed, succulent, twining, root climber. H to 15ft (5m). Has fleshy, rich green leaves. In summer, produces trusses of 12–40 fragrant, star-shaped flowers, white with red-purple markings. Z14–15 (min. 50°F/10°C)
***H. bella*.** See *H. lanceolata* subsp. *bella*.
H. carnosa (Wax plant) illus. p.460.
H. darwinii of gardens. See *H. australis*.
***H. imperialis*.** Vigorous, evergreen, woody-stemmed, twining and root climber. H to 20ft (6m). Ovate, leathery, leaves are covered with down and 4–9in (10–23cm) long. In summer, produces large, star-shaped, brown-purple to deep magenta flowers, each with a cream center. Z12–15 (min. 50°F/10°C)
H. lanceolata* subsp. *bella, syn. *H. bella*, illus. p.460.

HUERNIA

ASCLEPIADACEAE

Genus of clump-forming, perennial succulents with fingerlike, usually 4-angled stems. Has minute, short-lived, deciduous leaves on new growth. Needs sun or partial shade and very well-drained soil. One of the easiest stapeliads to grow. Propagate by seed or stem cuttings in spring or summer.
H. macrocarpa illus p.488.
***H. pillansii*.** Deciduous, clump-forming, perennial succulent. H 2in (5cm), S 4in (10cm). Has a fingerlike, light green stem that is densely covered with short tubercles with hairlike tips. Produces bell-shaped, creamy-red flowers, with red spots, at the base of new growth, from summer to early fall. Z13–15 (min. 52°F/11°C)
***H. primulina*.** See *H. thuretii* var. *primulina*.
H. thuretii* var. *primulina, syn. *H. primulina*. Deciduous, clump-forming, perennial succulent. H 4in (10cm), S 6in (15cm). Stems are short, thick and gray-green. From summer to early fall, bell-shaped, dull yellow flowers, ¾in (2cm) across, with reflexed, blackish tips, are produced at the base of new growth. Z13–15 (min. 52°F/11°C)
H. zebrina (Owl's eyes). Deciduous, clump-forming, perennial succulent. H 4in (10cm), S 6in (15cm). Similar to *H. thuretii* var. *primulina,* but has creamy yellow-green flowers with bands of red-brown. Z13–15 (min. 52°F/11°C)

***Humea*.** See *Calomeria*.

HUMULUS

Hops

CANNABACEAE

Genus of herbaceous perennials, with twining stems, grown as climbers. Useful for concealing unsightly garden sheds or tree-stumps. Male and female flowers are borne on separate plants; female flower spikes become drooping clusters known as 'hops'. Grow in sun or semishade and in any well-drained soil. Propagate by tip cuttings in spring.
H. lupulus (Hops). Z4–8.
'Aureus' (Hop) illus. p.194.

HUNNEMANNIA

PAPAVERACEAE

Genus of poppylike perennials, usually grown as annuals. Grow in sun and poor to fertile, very well-drained soil. Deadhead plants regularly. Provide support, especially in windy areas. Propagate by seed sown under glass in early spring, or outdoors in midspring.
H. fumariifolia (Mexican tulip poppy). **'Sunlite'** is a fast-growing, upright perennial, grown as an annual. H 2ft (60cm), S 8in (20cm). Has oblong, very divided, bluish-green leaves on lax stems. In summer and early fall, produces poppylike, semidouble, bright yellow flowers, to 3in (8cm) across. Z10–11

HYACINTHELLA

ASPARAGACEAE

Genus of spring-flowering bulbs, with short spikes of small, bell-shaped flowers, suitable for rock gardens and cold greenhouses. Requires an open, sunny situation and well-drained soil, which partially dries out while bulbs are dormant in summer. Propagate by seed in fall.
H. leucophaea illus. p.421.

HYACINTHOIDES

SYN. ENDYMION
Bluebell

ASPARAGACEAE

Genus of spring-flowering bulbs, grown for their bluebell flowers. Suitable for a growing in borders and for naturalizing in grass beneath trees and shrubs. Requires partial shade and plenty of moisture. Prefers heavy soil. Plant bulbs in fall 4–6in (10–15cm) deep. Propagate by division in late summer or by seed in fall.
① All parts may irritate skin on contact, and may cause severe discomfort if ingested.
H. hispanica of gardens. See *H.* x *massartiana*.
H. italica, syn. *Scilla italica*. Spring-flowering bulb. H 6–8in (15–20cm), S 2–3in (5–8cm). Leafless stem bears a conical spike of flattish, star-shaped, blue flowers, ½in (1cm) across, above a basal cluster of semierect, narrowly strap-shaped leaves. Z4–9
H.* x *massartiana, syn. *H. hispanica* of gardens (Spanish bluebell), illus. p.403.
H. non-scripta, syn. *Scilla non-scripta, S. nutans* (English bluebell), illus. p.403.

HYACINTHUS

Hyacinth

ASPARAGACEAE

Genus of bulbs, grown for their dense spikes of fragrant, tubular flowers; is ideal for spring bedding displays and for pot cultivation indoors. Vulnerable to frost damage in containers. Needs an open, sunny situation or partial shade and well-drained soil. Plant in fall. For winter flowers, force large-sized, specially "treated" bulbs of *H. orientalis* cultivars by potting in early fall. Keep cool and damp for several weeks to ensure adequate root systems develop. When shoot tips are visible, move into max. 50°F (10°C) at first, raising the temperature as the shoot grows and giving as much light as possible. After forcing, keep in a cool place to finish growth, then plant outdoors to recover. Propagate by offsets in late summer. ⓘ All parts may cause stomach upset if ingested; contact with bulbs may aggravate skin allergies.

H. amethystinus. See *Brimeura amethystina*.

H. azureus. See *Muscari azureum*.

***H. orientalis* 'Amsterdam'.** Winter- or spring-flowering bulb. H 8–12in (20–30cm), S 3in (8cm). Has strap-shaped, channeled, semierect, glossy, basal leaves that develop fully only after flowering. Flower stem bears a dense, cylindrical spike of fragrant, tubular, bright rose-red flowers, each with 6 recurving petals. Z5–9. **'Anna Marie'** bears spikes of single, pale pink flowers; good for forcing. **'Blue Jacket'** illus. p.403. **'Carnegie'** produces compact spikes of single, pure white flowers in late spring. **'City of Haarlem'** illus. p.407. **'Delft Blue'** has violet-flushed, soft blue flowers. **'Distinction'** produces slender, open spikes of reddish-purple flowers. **'Gipsy Queen'** bears single, salmon-orange flowers; those of **'Jan Bos'** are crimson. **'Lady Derby'** bears rose-pink flowers. **'L' Innocence'** has ivory-white flowers. **'Ostara'** produces a large spike of blue flowers, with a dark stripe along each petal center.**'Pink Pearl'** bears a dense spike of carmine-pink flowers. Flowers of **'Princess Maria Christina'** are salmon-pink; those of **'Queen of the Pinks'** are soft pink. **'Violet Pearl'** produces spikes of violet flowers. **'White Pearl'** illus. p.415.

HYDRANGEA

HYDRANGEACEAE

Genus of deciduous and evergreen shrubs and climbers, rarely trees, grown for their mainly domed or flattened flower heads. Each head usually consists of many small, inconspicuous, fertile flowers, surrounded by or mixed with much larger, sterile flowers bearing showy, petal-like sepals. However, in some forms, all or most of the flowers are sterile. Prefers full sun or semishade and fertile, moist but well-drained soil. Needs more shade in dry areas. Propagate by softwood cuttings in summer. ⓘ All parts of hydrangeas may cause mild stomach upset if ingested; contact with the foliage may aggravate skin allergies. See also feature panel pp.134–135.

H. anomala subsp. petiolaris, syn. *H. petiolaris* (Climbing hydrangea), illus. p.195.

***H. arborescens* 'Grandiflora'** (illus. p.134). Deciduous, open shrub. H and S 8ft (2.5m). Long-stalked, broadly ovate leaves are glossy, dark green above, paler beneath. Bears large, rounded heads of mainly sterile, white flowers in summer. Z4–9

H. aspera. Deciduous, upright shrub with arching branches. H and S 10ft (3m). Young stems are finely haired. Has lance-shaped to ovate, dark green leaves, downy beneath. Bears broad heads of pale blue, inner flowers, surrounded by lilac-pink to white, outer ones, in summer. Z6–9.

'Anthony Bullivant' (Lacecap) has broad, dark blue or plum fertile flowers surrounded by roundish, pink sterile flowers.

'Macrophylla' has broad, dark green leaves with margins rolled under and circular, blue-eyed, white, sterile flowers surrounding bright violet-blue, fertile flowers. **'Mauvette'** (illus. p.135) has slightly deeper purple-mauve flowers.

subsp. *sargentiana* (syn. *H. sargentiana*; illus. p.135), H 8ft (2.5m), S 6ft (2m), is gaunt, with peeling bark, sturdy shoots, and very large, ovate, bristly, dull green leaves, downy beneath. Inner flowers are blue or deep purple, the outer ones larger and white, sometimes flushed purplish-pink. **Villosa Group** (syn. *H. villosa*) illus. p.133. **Villosa Group** 'Velvet and Lace' (Lacecap) has ovate to lance-shaped leaves, softly hairy beneath. Bears flower heads comprising purple-blue, fertile flowers and nodding, mauve-pink sterile, outer flowers, from midsummer to late fall.

H. heteromalla. Deciduous, arching shrub. H 15ft (5m), S 10ft (3m). Narrowly ovate, dark green leaves turn yellow in fall. Broad, flat, open heads of white flowers, 7in (17cm) across, are borne in mid- and late summer. Z4–9. **Bretschneideri Group** has peeling, chestnut-brown bark and large leaves, to 5in (12cm) long and half as much wide. **'Snowcap'** (illus. p.134) has large, flat, white flower heads, to 10in (25cm) across.

H. integerrima. See *H. serratifolia*.

H. involucrata. Deciduous, spreading, open shrub. H 3ft (1m), S 6ft (2m). Has broadly heart-shaped, bristly, mid-green leaves. During late summer, bears heads of small, blue, inner flowers surrounded by large, pale blue to white, outer ones. Z7–11. **'Hortensis'** (illus. p.134) is smaller and has clusters of cream, pink and green flowers. Z7–9

H. macrophylla (Bigleaf hydrangea). Deciduous, bushy shrub. H 5–6ft (1.5–2m), S 6–8ft (2–2.5m). Has ovate, toothed, glossy, light green leaves. In mid- to late summer, blue or purple flowers are produced in acidic soils with a pH of up to about 5.5. In neutral or alkaline soils above this level, flowers are pink or red. White flowers are not affected by pH. Prune older shoots back to base in spring. Trim back winter-damaged shoots to new growth and remove spent flower heads in spring. Cultivars of *H. macrophylla* are divided into 2 groups: Hortensias have domed, dense heads of mainly sterile flowers; Lacecaps have flat, open heads, each with fertile flowers in the center and larger, sterile flowers on the outside that are green in bud. Z6–9. **'Altona'** (Hortensia; illus. p.134), H 3ft (1m), S 5ft (1.5m), has large heads of rich pink to deep purple-blue flowers. **'Blaumeise'** (Teller Series; Lacecap), H 5ft (1.5m), has light blue, fertile flowers with white stamens and large, brilliant-blue, sterile flowers; colors best on acidic soils high in aluminium. **'Europa'** (Hortensia; illus. p.135), H 5ft (1.5m), S 3ft (1m), produces large florets of rich pink flowers. Flower heads of **'Générale Vicomtesse de Vibraye'** (Hortensia), H and S 5ft (1.5m), are rounded and pale blue or pink. Foliage is light green. **'Geoffrey Chadbund'** see *H.m.* 'Möwe'. **'Hanabi'** (Lacecap), is tall-growing, with double, green, fertile flowers surrounded by a ring of long-stalked, double, star-shaped, blue, sterile flowers resembling an exploding firework. **'Hamburg'** (Hortensia; illus. p.134), is vigorous and has large heads of dark pink to dark blue flowers with toothed sepals. **'Kardinal'** (Teller Series; Lacecap), is vigorous, with dark red florets in a double ring. **'Klaveren'** (Lacecap), H 4ft (1.2m), has lilac-pink flowers in large heads, to 8in (20cm) across. **'Lanarth White'** (Lacecap; illus. p.134), H and S 5ft (1.5m), has pink or blue, fertile flowers edged with pure white, sterile flowers. **'Libelle'** (Teller Series; Lacecap; illus. p.135), H and S 5ft (1.5m), produces very pale blue flowers, fading to creamy-white, over a long period. **'Lilacina'** see *H.m.* 'Mariesii Lilacina'. **'Love You Kiss'** (Hovaria Series; Lacecap), H 3ft (1m), is low-growing, with red-flushed leaves and white flowers with deep pink margins. **'Mariesii Lilacina'** (syn. *H.m.* 'Lilacina'; Lacecap; illus. p.134), H and S 6ft (2m), has deep lilac, central flowers and pinkish-purple, outer flowers. **'Möwe'** (Teller Series; syn. *H.m.* 'Geoffrey Chadbund'; Lacecap), H and S 3ft (1m), has broad, flat flower heads ranging in color from purple-red to deep pink. **'Nachtigall'** (Teller Series; Lacecap), H 5ft (1.5m), has dark blue or violet (pink on chalky soils), sterile flowers in a single ring around pale-budded, violet-anthered, fertile flowers. **'Pfau'** (Teller Series; Lacecap), H 2ft (60cm), is dwarfish, bearing small flower heads of bright blue or pink florets with pointed sepals. **'Preziosa'** see *H.* 'Preziosa'. **'Quadricolor'** (Lacecap), H 5ft (1.5m), S 4ft (1.2m), has leaves boldly variegated in green, cream, and yellow, and pale pink flowers; often confused with the weaker-growing 'Tricolor'. **'Rotschwanz'** (Teller Series; Lacecap), H 5ft (1.5m), has large flower heads with star-shaped, deep red, sterile flowers around pink-anthered, pale, fertile flowers.

subsp. *serrata* see *H. serrata*. **'Tokyo Delight'** (Lacecap), H and S 3ft (1m), produces pink or white flowers that mature to wine-red. **'Tricolor'** (Lacecap), H 6ft (2m), S 5ft (1.5m), has variegated, gray-green and yellow leaves and bears pale pink to white flowers in late summer. **'Veitchii'** (Lacecap) has lilac-blue, fertile flowers, surrounded by white, sterile flowers that age to pink. **'Westfalen'** (Hortensia), H and S 3ft (1m), bears bright red to purple flowers. **'Zorro'** (Lacecap), H 5ft (1.5m), has sturdy, almost black stems and flower heads of dazzling blue on acidic soils (pink in alkaline conditions).

H. paniculata. Vigorous, deciduous, spreading to upright shrub. H 6–10ft (2–3m), S 8–10ft (2.5–3m). Has ovate, pointed, toothed, mid- to dark green leaves. In summer and early fall, produces large, usually conical panicles of tiny, sometimes rose-tinted, creamy-white, fertile flowers surrounded by large, petal-like, white, sterile flowers that usually age to varying pink shades. Prune moderately to hard annually to promote vigorous growth and large flower heads. Z4–8.

'Big Ben' (illus. p.134), H and S 5½ft (1.7m), has an upright habit, red stems and, in midsummer, produces abundant, large, conical panicles of pale green, sterile florets that turn white and then age to deep pink in midfall. Needs moderate to hard pruning. **'Brussels Lace'** has dark green leaves and white flowers in late summer and early fall. Needs moderate pruning. **'Dharuma'** (illus. p.135), H and S 4ft (1.2m), is a compact, relatively slow-growing cultivar with mahogany-red stems, dark green leaves and rounded heads of white, sterile flowers in midsummer; these mature to deep pink by midfall. Best left unpruned or given only light pruning annually. Good in a small garden.

'Limelight' (illus. p.135), H 5½ft (1.7m), S 7ft (2.2m), is robust and produces very dense, broadly conical panicles of lime-green, sterile flowers in midsummer, maturing to a mixture of lime-green and warm pink by midfall. Needs moderate pruning. **'Phantom'** (illus. p.134), H 5ft (1.5m), S 7ft (2.2m), is a robust, upright cultivar producing dense, conical, rounded heads of sterile, white flowers, flushed yellow-green at tips, in midsummer; these age to warm, deep pink by early fall. Needs moderate to hard pruning. Flower heads of **Pink Diamond ('Interhydia')** (illus. p.135), turn pink with age. **Pinky-Winky ('Dvppinky')** (illus. p.134), H 4½ft (1.4m), S 5½ft (1.6m), has a compact, upright, slightly spreading habit with dark red stems, yellowish-green leaves and dense, tapered, conical heads of lime-green, sterile flowers in midsummer; these age to deep pink by early fall. Responds well to moderate pruning.

Good in a small garden. **'Silver Dollar** (illus. p.134), H 4ft (1.2m), S 5½ft (1.7m), is compact with strong stems. Bears dense, rounded heads of white, sterile flowers, tipped pale yellow-green, in midsummer; they mature to pink in midfall. Responds well to hard pruning. Good in a small garden. **'Unique'** is vigorous and produces very large flower heads of mainly sterile, white flowers that age to pinkish-white.

H. petiolaris. See *H. anomala* subsp. *petiolaris*.

***H.* 'Preziosa'**, syn. *H. macrophylla* 'Preziosa', *H. serrata* 'Preziosa'. Deciduous, bushy shrub. H 5–6ft (1.5–2m), S 5ft (1.5m). Has ovate, toothed, light green leaves. Pink flowers turn to deep crimson. Z6–9

H. quercifolia (Oakleaf hydrangea). Deciduous, bushy, mound-forming shrub.

H and S 6ft (2m). Deeply lobed, dark green leaves turn red and purple in fall. Has white flower heads from midsummer to midfall. Z5–9. **Snowflake ('Brido')** (illus. p.134), produces pure white, fertile flower bracts surrounded by a double rank of white, sterile flower bracts. **Snow Queen ('Flemygea')** (illus. p.135) has profuse, large, sterile flowers in dense, upright flower heads.
***H. sargentiana*.** See *H. aspera* subsp. *sargentiana*.
***H. scandens* subsp. *chinensis*.** Deciduous, woody-stemmed, scrambling shrub. H and S to 10ft (3m). Has spreading, often pendent, branchlets and lance-shaped, slightly leathery, toothed leaves. In summer, bears numerous, flattened flower heads with central clusters of small, white, sterile flowers and several blue to white, sterile flowers along the margins. Suitable for training along a low wall. Z7–9
H. seemanii illus. p.196.
H. serrata, syn. *H. macrophylla* subsp. *serrata*. Deciduous, bushy, dense shrub. H and S 4ft (1.2m). Has slender stems and light green leaves. From mid- to late summer, bears flat heads of pink, lilac or white, inner flowers and pink or blue, outer flowers. Z6–9. **'Acuminata'** see *H.s.* 'Bluebird'. **'Bluebird'** (syn. *H.s.* 'Acuminata'; illus. p.135) has pale pink, pale purple, or blue flowers. **'Diadem'** (illus. p.134) has a compact habit and bright blue—sometimes pink—flowers. **'Grayswood'** (illus. p.135), H and S 5ft (1.5m), is slow-growing and bears blue, fertile flowers surrounded by white to pink, sterile flowers. **'Kiyosumi'** (illus. p.135) bears purple young leaves and pink to white, fertile flowers encircled by red-edged, white, sterile flowers. **'Preziosa'** see *H.* 'Preziosa'.
***H. serratifolia*,** syn. *H. integerrima*, illus. p.196.
***H. villosa*.** See *H. aspera* Villosa Group.

HYDROCLEYS

syn. HYDROCLEIS

ALISMATACEAE

Genus of deciduous or evergreen, annual or perennial, water plants, grown for their floating foliage and attractive flowers. Best grown in large aquariums and tropical ponds with good light. Propagate by seed when ripe or by tip cuttings year-round.
H. nymphoides (Water poppy) illus. p.445.

HYGROPHILA

ACANTHACEAE

Genus of deciduous or evergreen, perennial, marginal and submerged water plants and marsh plants, grown for their foliage. Remove fading leaves regularly. Propagate by stem cuttings in spring or summer.
H. difformis (Water wisteria). Evergreen, aquatic perennial. S indefinite. Has slender, soft stems, clothed in divided, mid-green, submerged leaves. In summer, bears whorls of tubular, lilac to violet flowers, streaked red-violet within, from axils of thicker, aerial leaves that are lance-shaped, dark green, and scalloped. Z11–12 (min. 68°F/20°C)

HYLOCEREUS

CACTACEAE

Genus of fast-growing, perennial, epiphytic cacti with erect, slender, climbing stems that are jointed into sections, and many aerial roots. Provides successful grafting stock, except in northern Europe. Needs sun or partial shade and very well-drained soil. Propagate by stem cuttings in spring or summer.
***H. undatus*.** Fast-growing, epiphytic or climbing, perennial cactus. H 3ft (1m), S indefinite. Has freely branching, 3-angled, weakly spined, dark green stems, 3in (7cm) wide. In summer, bears flattish, white flowers, 12in (30cm) across, that last only one night. Z11 (min. 59°F/15°C)

HYLOMECON

PAPAVERACEAE

Genus of vigorous, rhizomatous perennials, grown for their large, cup-shaped flowers. Good for rock gardens, borders and woodlands, but may be invasive. Prefers a partially shaded position and humus-rich, moist soil. Propagate by division in spring or by seed in fall.
H. japonica illus. p.335.

HYLOTELEPHIUM

CRASSULACEAE

Genus of deciduous, perennial succulents similar to *Rhodiola*, with annual stems from a tuberous rootstock, bearing flat fleshy leaves and terminal panicles of white, pink or red flowers in fall. Best in full sun or light shade with a well-drained soil. Propagate by seed, stem cuttings, or root division. Good for bees. ⓘ All parts of the plants may cause mild stomach upset if ingested; contact with the sap may irritate skin.
H. anacampseros, syn. *Sedum anacampseros*. Semievergreen, trailing perennial with overwintering foliage rosettes. H 4in (10cm), S 10in (25cm) or more. Prostrate, loosely rosetted, brown stems bear oblong to ovate, fleshy, glaucous green leaves. Has dense, almost round, terminal heads of small, cup-shaped, purplish-pink flowers in summer. Z5–9
***H.* 'Bertram Anderson'**, syn. *Sedum* 'Bertram Anderson'. Clump-forming perennial. H 8in (20cm), S 12in (30cm). Prostrate stems bear rounded, toothed, fleshy, dusky-purple leaves. In late summer, produces rounded, flattish, terminal heads of star-shaped, dark pink flowers. Z2–9
H. cauticola, syn. *Sedum cauticola*. Trailing, shallow-rooted perennial with rooting stems. H 2in (5cm), S 8in (20cm). Has ovate to oblong, stalked, fleshy, blue-green leaves on lax, purplish-red stems. Bears flattish heads of star-shaped, pale purplish-pink flowers in early fall. Cut back old stems in winter. Z5–9
H. erythrostictum, syn. *Sedum erythrostictum*. Clump-forming perennial. H 16–24in (40–60cm), S 16in (40cm). Has unbranched stems bearing ovate, toothed, fleshy, gray-green leaves. In late summer, bears domed, terminal heads of star-shaped, pink and white flowers with leafy bracts. Z6–9. **'Frosty Morn'** (syn. *Sedum erythrostictum* 'Frosty Morn') has variegated, narrowly spoon-shaped leaves, edged with white. Flower heads in late summer also display variegation.
'Mediovariegatum' (syn. *Sedum erythrostictum* 'Mediovariegatum'; illus. p.279) bears yellow-green leaves each with a central, creamy-white mark.
***H. ewersii*,** syn. *Sedum ewersii*. Trailing perennial. H 2in (5cm), S 6in (15cm). Similar to *H. cauticola*, but has more rounded, stem-clasping leaves, often tinted red, and dense, rounded flower heads. Z2–9
***H.* 'Herbstfreude'**, syn. *Sedum* 'Autumn Joy', *S.* 'Herbstfreude' (illus. p.279). Clump-forming perennial. H 2ft (60cm), S 20in (50cm). Has ovate, toothed, fleshy, gray-green leaves on sturdy, erect stems. In late summer and fall, bears flattened, broad, terminal heads of small, star-shaped, brick-red flowers that fade to brown. Z3–9
***H.* 'Matrona'**, syn. *Sedum* 'Matrona' (illus. p.279). Clump-forming perennial. H 2ft (60cm), S 20in (50cm). Has ovate, toothed, fleshy, purple-flushed, brown-green leaves on erect, purple stems. In late summer, produces flattened, terminal heads of small, star-shaped, pink flowers. Z3–8
H. populifolium, syn. *Sedum populifolium*. Semievergreen, bushy perennial. H 12–18in (30–45cm), S 12in (30cm). Has broadly ovate, fleshy, irregularly toothed, mid-green leaves. Bears terminal clusters of hawthorn-scented, star-shaped, pale pink or white flowers in late summer. Z6–9
***H.* 'Red Cauli'**, syn. *Sedum* 'Red Cauli' (illus. p.279). Clump-forming, compact perennial. H 12–16in (30–40cm), S 12in (30cm). Has ovate, toothed, fleshy, gray-purple leaves on erect stems. In summer, bears cauliflower-like, domed, terminal heads of star-shaped, rich red flowers. Z3–8
***H.* 'Ruby Glow'**, syn. *Sedum* 'Ruby Glow' (illus. p.279). Deciduous, clump-forming perennial with prostrate stems. H 8in (20cm), S 16in (40cm). Has toothed, fleshy, gray-purple leaves. In late summer, bears loose, terminal heads of star-shaped, pink and ruby-red flowers. Z5–9
***H. sieboldii* 'Misebaya-nakafu'**, syn. *Sedum sieboldii* 'Foliis Medio-variegatis', *S.s.* 'Mediovariegatum'. Spreading, tuberous perennial with long, tapering tap roots. H 4in (10cm), S 8in (20cm) or more. Whorls of fleshy, rounded, blue-green leaves have central, cream splashes and sometimes red edges. Produces open, terminal heads of star-shaped, pink flowers in late summer. Good in an alpine house. Z6–9
H. spectabile, syn. *Sedum spectabile* (Ice-plant). Clump-forming perennial. H and S 18in (45cm). Has ovate, indented, fleshy, gray-green leaves, above which flat heads of small, star-shaped, pink flowers that attract butterflies are borne in late summer. Z4–9. **Brilliant Group 'Brilliant'** (syn. *Sedum spectabile* 'Brilliant') illus. p.278. **'Iceberg'** (syn. *Sedum spectabile* 'Iceberg'; illus. p.279) has pale green leaves and heads of greenish-white flowers, pink-tinged with age. **'Stardust'** (syn. *Sedum spectabile* 'Stardust') has flower heads that may be white or pink on the same plant.
***H.* 'Stewed Rhubarb Mountain'**, syn. *Sedum* 'Stewed Rhubarb Mountain'. Clump-forming, compact perennial. H and S 12in (30cm). Has ovate, toothed, fleshy, pinkish-green leaves on erect stems. In late summer, bears rounded, terminal heads of star-shaped, pale green, pale pink, and darker pink flowers. Z3–9
H. tatarinowii, syn. *Sedum tatarinowii*. Arching, spreading, tuberous perennial. H 4in (10cm), S 8in (20cm). Has small, ovate, toothed, green leaves on purplish stems. Rounded, terminal heads of star-shaped, pink-flushed, white flowers are produced in late summer. Suits an alpine house. Z3–9
H. telephium, syn. *Sedum telephium*. Rather variable, clump-forming perennial, sometimes with a rather open, lax habit. H 24–28in (60–70cm), S 20in (50cm). Erect stems bear ovate, fleshy, often toothed, blue-green leaves. From late summer to fall, bears domed, branched, terminal heads of star-shaped, reddish- or purplish-pink flowers. Z4–9. **Atropurpureum Group** (syn. *Sedum telephium* Atropurpureum Group) has red stems, dark red leaves, and pink flowers.
Atropurpureum Group 'Purple Emperor' (syn. *Sedum telephium* 'Purple Emperor'; illus. p.279), H 20in (50cm), S 12in (30cm), is neat and compact, with dark purple leaves and pinkish-red flowers. **subsp. *maximum* 'Gooseberry Fool'** (syn. *Sedum telephium* 'Gooseberry Fool'; illus. p.279). H 20in (50cm), S 12in (30cm), bears red-flushed, greenish-gray leaves and domed heads of green and white flowers. **'Strawberries and Cream'** (syn. *Sedum telephium* 'Strawberries and Cream'; illus. p.279), H and S 20–24in (50–60cm), has purple stems, toothed, green-purple leaves, and pinkish-green flowers opening from dark pink buds.

***Hymenanthera*.** See *Melicytus*.

HYMENOCALLIS

Spider lily

AMARYLLIDACEAE

Genus of bulbs, some of which are evergreen, grown for their fragrant flowers, somewhat like those of large daffodils. Needs a sheltered site, full sun or partial shade, and well-drained soil. Plant in early summer, lifting for winter in cold districts. Alternatively, grow in a heated greenhouse; reduce water in winter, without drying out completely, and repot in spring. Propagate by offsets in spring or early summer.
***H. calathina*.** See *Ismene narcissiflora*.
***H.* x *festalis*.** See *Ismene* x *deflexa*.
H.* x *macrostephana, syn. *Ismene* x *macrostephana*. Evergreen, spring- or summer-flowering bulb. H 32in (80cm), S 12in (30cm). Has strap-shaped, semierect, basal leaves. Bears fragrant, white, cream, or greenish-yellow flowers. Z8–10 (min. 41°F/5°C)
***H. narcissiflora*.** See *Ismene narcissiflora*.
***H. speciosa*.** Evergreen, winter-flowering bulb. H and S 12–18in (30–45cm). Has broadly oblong, semierect, basal leaves. Produces a head of up to 12 fragrant, white or greenish-white flowers, each 8–12in (20–30cm) across, with a funnel-

shaped cup and 6 narrow petals. Z14–15 (min. 50°F/10°C)
***H.* x *spofforthiae* 'Sulphur Queen'.** See *Ismene* x *spofforthiae* 'Sulphur Queen'.

HYMENOSPORUM
Australian frangipani
PITTOSPORACEAE

Genus of one species of evergreen shrub or tree, grown for its flowers and overall appearance. Prefers full sun, although some shade is tolerated. Requires humus-rich, well-drained soil, ideally neutral to acidic. Water containerized specimens freely when in full growth, less at other times. Propagate by seed when ripe, in fall, or in spring or by semiripe cuttings in late summer.
H. flavum (Australian frangipani). Evergreen, erect shrub or tree, gradually spreading with age. H 30ft (10m) or more, S 15ft (5m) or more. Has ovate to oblong, lustrous, rich green leaves. From spring t o summer, bears terminal panicles of very fragrant, tubular, 5-petaled, cream flowers that age to deep sulfur-yellow. Z9–11 (min. 41°F/5°C)

HYPERICUM
St. John's wort
CLUSIACEAE/HYPERICACEAE

Genus of annuals, perennials, and deciduous, semievergreen, or evergreen shrubs and trees, grown for their showy, yellow flowers with prominent stamens. Large species and cultivars need sun or semishade and fertile, not too dry soil. Smaller types, which are good in rock gardens, do best in full sun and well-drained soil. Propagate species subshrubs and shrubs by softwood cuttings in summer or by seed in fall; cultivars by softwood cuttings only in summer; perennials by seed or by division in fall or spring. Generally trouble-free, but *H.* x *inodorum* 'Elstead' is susceptible to rust, which produces orange spots on leaves and *H.* 'Hidcote' to a virus that makes leaves narrow and variegated.
H. balearicum. Evergreen, compact shrub. H and S to 2ft (60cm). Small, ovate, green leaves have wavy edges and rounded tips. Solitary, large, fragrant, shallowly cup-shaped, yellow flowers are produced at stem tips above foliage from early summer to fall. Z6–9
***H. beanii* 'Gold Cup'.** See *H.* x *cyathiflorum* 'Gold Cup'.
H. bellum. Semievergreen, arching, graceful shrub. H 3ft (1m), S 5ft (1.5m). Cup-shaped, golden-yellow flowers are borne in summer. Shoots are red. Ovate, wavy-edged, mid-green leaves redden in fall. Z5–9
H. calycinum (Aaron's beard, Rose of Sharon) illus. p.161.
H. cerastioides, syn. *H. rhodoppeum*, illus. p.373.
***H.* 'Citrinum'.** *See H. olympicum* f. *uniflorum* 'Citrinum'.
***H.* x *cyathiflorum* 'Gold Cup'**, syn. *H. beanii* 'Gold Cup'. Semievergreen, arching shrub. H 5ft (1.5m), S 6ft (2m). Produces pinkish-brown shoots, ovate, dark green leaves and, in summer, large, cup-shaped, golden-yellow flowers. Z8–9
***H.* x *dummeri* 'Peter Dummer'.** Compact, mounding, evergreen or semievergreen shrub. H 2ft (60cm), S 20in (50cm). Has ovate to lance-shaped, blue-green leaves, reddish when young, often tinged reddish-purple in winter. From early summer, bears large, saucer-shaped, orange-anthered, golden-yellow flowers. Red-tinged fruits follow in fall. Z5–7
H. forrestii, syn. *H. patulum* var. *forrestii*. Upright, spreading, deciduous shrub. H 4ft (1.2m), S 5ft (1.5m). Produces mid-green leaves that turn red in late fall and early winter. Abundant, large, cup-shaped, golden yellow flowers, are borne from summer to fall. Z5–9
***H.* 'Hidcote'.** See *H.* x *hidcoteense* 'Hidcote'.
***H.* x *hidcoteense* 'Hidcote'**, syn. *H.* 'Hidcote', *H. patulum* 'Hidcote', illus. p.160.
H. kouytchense, illus. p.161.
H. lancasteri. Spreading, deciduous shrub. H and S 3ft (1m). Mid-green leaves, bronze when young, are glaucous beneath. In summer, bears clusters of golden yellow flowers, with star-shaped, red-margined calyces, conspicuous before they open. Z6–10
***H.* x *moserianum*.** Deciduous, arching shrub. H and S 2ft (60cm). Small, bowl-shaped, yellow flowers are borne above ovate, dark green leaves from midsummer to midfall. Z7–9. **'Tricolor'** (syn. *H.* 'Variegatum), has leaves edged in white and pink. Prefers a sheltered position.
H. olympicum. Deciduous, upright, slightly spreading, dense shrub. H 6–12in (15–30cm), S to 6in (15cm). Tufts of upright stems are covered in small, ovate, gray-green leaves. Produces terminal clusters of up to 5 cup-shaped, bright yellow flowers in summer. Z5–8.
f. *uniflorum* 'Citrinum' (syn. *H.* 'Citrinum') illus. p.343.
H. patulum. Bushy, evergreen or semievergreen, upright shrub. H and S 3ft (1m). Large, cup-shaped, golden-yellow flowers open above ovate, dark green leaves from midsummer to midfall. Z7–9.
var. *forrestii* see *H. forrestii*. **'Hidcote'** see *H.* x *hidcoteense* 'Hidcote'.
H. pseudohenryi (Irish Tutsan) illus. p.161
H. rhodoppeum. See *H. cerastioides*.
***H.* 'Rowallane'** illus. p.206.
***H.* 'Variegatum'.** See *H.* x *moserianum* 'Tricolor'.

Hypocyrta radicans. See *Nematanthus gregarius*.
Hypocyrta strigillosa. See *Nematanthus strigillosus*.

HYPOESTES
Polka dot plant
ACANTHACEAE

Genus of woody-based, evergreen perennials, shrubs, and subshrubs, some of which are grown for their flowers and some for their foliage. Needs bright light and well-drained soil. Water often in growing season, less in winter. Straggly stems should be cut back. Propagate by stem cuttings in spring or summer. *H. phyllostachya* may be grown as an annual from seed sown in spring.
H. aristata (Ribbon bush). Evergreen, bushy, woody-based perennial. H to 3ft (1m), S 2ft (60cm). Has ovate, mid-green leaves. Small, tubular, deep pink to purple flowers are produced in terminal spikes in late winter. Z14–15 (min. 55°F/13°C)
H. phyllostachya, syn. *H. sanguinolenta* of gardens (Freckle face, Polka dot plant), illus. p.300.
H. sanguinolenta of gardens. See *H. phyllostachya*.

HYPOXIS
Starflower
HYPOXIDACEAE

Genus of spring- or summer-flowering corms, grown for their flat, star-shaped flowers. Suits rock gardens. Requires full sun and well-drained soil. Propagate by seed in spring.
H. angustifolia. Summer-flowering corm. H 4–8in (10–20cm), S 2–3in (5–8cm). Has slender, hairy, semierect, basal leaves. Stems each bear 3–7 star-shaped, yellow flowers, ⅝–¾in (1.5–2cm) across. Z11–14
H. capensis, syn. *H. stellata, Spiloxene capensis*. Spring-flowering corm with a basal leaf cluster. H 4–8in (10–20cm), S 2–3in (5–8cm). Has slender, narrowly lance-shaped, erect leaves. Stems each produce an upward-facing flower with pointed, white or yellow petals, and a purple eye. Z9–10
H. stellata. See *H. capensis*.

HYPSELA
CAMPANULACEAE

Genus of vigorous, creeping perennials, grown for their flowers and heart-shaped leaves. Good as groundcover, especially in rock gardens. Needs shade and moist soil. Propagate by division in spring.
H. longiflora. See *H. reniformis*.
H. reniformis, syn. *H. longiflora, Lobelia oligophylla*. Vigorous, creeping, stemless perennial. H ¾in (2cm), S indefinite. Has tiny, heart-shaped, fleshy leaves and, from spring to summer, small, star-shaped, pink-and-white flowers. Z7–9

HYSSOPUS
Hyssop
LAMIACEAE/LABIATAE

Genus of perennials and semievergreen or evergreen shrubs, grown for their flowers, which attract bees and butterflies, and for their aromatic foliage, which has culinary and medicinal uses. May be grown as a low hedge. Requires full sun and fertile, well-drained soil. Cut back hard or, if grown as a hedge, trim lightly, in spring. Propagate by softwood cuttings in summer or by seed in fall.
H. officinalis (Hyssop) illus. p.157.
f. *albus* is a semievergreen, upright, dense shrub. H 2ft (60cm), S 3ft (1m). Aromatic, narrowly lance-shaped leaves are bright green. Bears densely clustered, small, white flowers from midsummer to early fall. **subsp. *aristatus*** has dark blue flowers. Z6–8

I

IBERIS
Candytuft
BRASSICACEAE/CRUCIFERAE

Genus of annuals, perennials and evergreen subshrubs, grown for their flowers. Excellent for a rock garden. Some species are short-lived, flowering themselves to death. Requires sun and well-drained soil. Propagate by seed in spring, and subshrubs and shrubs by semiripe cuttings in summer.
I. amara illus. p.299. **'Giant Hyacinth-flowered'** is a group of fast-growing, upright, bushy annuals. H 12in (30cm), S 6in (15cm). They have lance-shaped, mid-green leaves and, in summer, bear flattish heads of large, scented, 4-petaled flowers in a variety of colors. Z11
I. commutata. See *I. sempervirens*.
I. saxatilis illus. p.360.
I. sempervirens, syn. *I. commutata*, illus. p.332. **'Snowflake'** (syn. *I.s.* 'Schneeflocke') is an evergreen, spreading subshrub. H 6–12in (15–30cm), S 18–24in (45–60cm). Leaves are narrowly oblong, glossy and dark green. Dense, semispherical heads of 4-petaled, white flowers are produced in late spring and early summer. Trim after flowering. Z5–9
***I. umbellata*.** Fast-growing, upright, bushy annual. H 6–12in (15–30cm), S 8in (20cm). Has lance-shaped, mid-green leaves. Heads of small, 4-petaled, white or pale purple flowers, sometimes bicolored, are borne in summer and early fall. Z6–10.
Fairy Series illus. p.304.

IDESIA
SALICACEAE

Genus of one species of deciduous, summer-flowering tree, grown for its foliage and fruits. Both male and female plants are required to obtain fruits. Needs sun or semishade and fertile, moist but well-drained soil, preferably neutral to acidic. Propagate by softwood cuttings in summer or by seed in fall.
I. polycarpa illus. p.75.

ILEX
Holly
AQUIFOLIACEAE

Genus of evergreen or deciduous trees, shrubs and, rarely, climbers, grown for their foliage and fruits (berries). Mainly spherical berries, ranging in color from red through yellow to black, are produced in fall, following insignificant, usually white, flowers borne in spring. Almost all plants are unisexual, and to obtain fruits on a female plant, a male also needs to be grown. All prefer well-drained soil. Grow in sun or shade, but deciduous plants and those with variegated foliage do best in sun or semishade. Hollies resent being transplanted, but respond well to hard pruning and pollarding, which should be done in late spring. Propagate by seed

in fall or by semiripe cuttings from late summer to early winter. Holly leaf miner and holly aphid may cause problems. ⓘ Berries may cause mild stomach upset if ingested. See also feature panel p.94.

***I.* x *altaclerensis*.** Group of vigorous, evergreen shrubs and trees. Resistant to pollution and coastal exposure. Z7–9.

'Balearica' (illus. p.94) is an erect, female tree. H 40ft (12m), S 15ft (5m). Has green to olive-green young branches. Large, broadly ovate leaves are spiny- or smooth-edged and glossy, dark green. Freely produces large, bright red berries.

'Belgica' is an erect, dense, female tree. H 40ft (12m), S 15ft (5m). Young branches are green to yellowish-green. Has large, lance-shaped to oblong, spiny- or smooth-edged, glossy, mid-green leaves. Large, orange-red fruits are freely produced.

'Belgica Aurea' (syn. *I.* x *a.* 'Silver Sentinel', *I. perado* 'Aurea'; illus. p.94) is an upright, female tree. H 25ft (8m), S 10ft (3m). Young branches are green with yellow streaks. Has large, lance-shaped, mainly spineless, dark green leaves, mottled with gray-green and irregularly edged with yellow. Red berries are produced only rarely.

'Camelliifolia' (illus. p.94) is a narrow, pyramidal, female tree. H 45ft (14m), S 10ft (3m). Has purple young branches and large, oblong, mainly smooth-edged, glossy, dark green leaves. Reliably produces large, scarlet fruits; is an excellent specimen tree.

'Camelliifolia Variegata' (illus. p.94), H 25ft (8m), S 10ft (3m), is similar to *I.* x *a.* 'Camelliifolia', but leaves have broad, yellow margins.

'Golden King' (illus. p.94) is a bushy, female shrub. H 20ft (6m), S 15ft (5m). Young branches are green with a purplish flush. Has large, oblong to ovate, sometimes slightly spiny, dark green leaves, each splashed with gray-green in the center and with a bright yellow margin that turns to cream on older leaves. Not a good fruiter, bearing only a few reddish-brown berries, but excellent as a hedge or a specimen plant.

'Hodginsii' is a vigorous, dense, male tree. H 45ft (14m), S 30ft (10m). Shoots are purple; leaves are broadly ovate, sparsely spiny and glossy, blackish-green.

'Lawsoniana' is a bushy, female shrub. H 20ft (6m), S 15ft (5m). Similar to *I.* x *a.* 'Golden King', but has leaves splashed irregularly in the center with gold and lighter green. Foliage tends to revert to plain green.

'Silver Sentinel' see *I.* x *a.* 'Belgica Aurea'.

'Wilsonii' is a vigorous, female tree. H 25ft (8m), S 15ft (5m). Has purplish-green young branches and large, oblong to ovate, glossy, mid-green leaves with prominent veins and large spines. Freely produces large, scarlet fruits and is a good hedging or specimen plant.

I. aquifolium (English holly; illus. p.94). Evergreen, much-branched, erect shrub or tree. H 70ft (20m), S 20ft (6m). Has variably shaped, wavy, sharply spined, glossy, dark green leaves and bright red berries. Z7–9.

'Amber' illus. p.92.

'Argentea Marginata' (Silver-margined holly; illus. p.94) is a columnar, female tree. H 45ft (14m), S 15ft (5m). Young branches are green, streaked with cream. Broadly ovate, spiny, dark green leaves, with wide, cream margins, are shrimp-pink when young. Bears an abundance of bright red berries. Good for hedging.

'Argentea Marginata Pendula' (Perry's weeping silver holly) is a slow-growing, weeping, female tree. H 20ft (6m), S 15ft (5m). Has purple young branches and broadly ovate, spiny, dark green leaves, mottled with gray-green and broadly edged with cream. Bears red fruits. Good as a specimen plant in a small garden.

'Atlas' is an erect, male shrub. H 15ft (5m), S 10ft (3m). Has green young branches and ovate, spiny, glossy, dark green leaves. Useful for landscaping and hedging.

'Aurea Regina' see *I.a.* 'Golden Queen'.

'Aurifodina' is an erect, dense, female shrub. H 20ft (6m), S 10ft (3m). Young branches are purplish. Ovate, spiny leaves are olive-green with golden margins that turn tawny-yellow in winter. Produces a good crop of deep scarlet fruits.

'Bacciflava' (syn. f. *bacciflava*; illus. p.94) is a much-branched, usually erect shrub or tree. H 70ft (20m), S 20ft (6m). Has variably shaped, wavy, sharply spined, glossy, dark green leaves and yellow fruits.

'Ferox' (Hedgehog holly) is an open, male shrub. H 20ft (6m), S 12ft (4m). Has purple young branches and ovate, dark green leaves with spines over the entire leaf surface.

'Ferox Argentea' (Silver hedgehog holly; illus. p.94) is similar to *I.a.* 'Ferox', but has leaves with cream margins.

'Flavescens' (Moonlight holly) is a columnar, female shrub. H 20ft (6m), S 15ft (5m). Young branches are purplish-red. Variably shaped leaves are dark green, with a yellowish flush when young that will last year-round when grown in good light. Produces plentiful, red berries.

'Golden Milkboy' (illus. p.94) is a dense, male shrub. H 20ft (6m), S 12ft (4m). Has purplish-green young branches and ovate, very spiny, bright green leaves with heavily blotched, bright yellow centers. Leaves tend to revert to plain green.

'Golden Queen' (syn. *I.a.* 'Aurea Regina') is a dense tree that, despite its name, is male. H 30ft (10m), S 20ft (6m). Broadly ovate, very spiny, mid-green leaves are edged with golden-yellow.

'Golden van Tol', a sport of *I.a.* 'J.C. van Tol', is an upright, female shrub. H 12ft (4m), S 10ft (3m). Young branches are purple. Ovate, puckered, slightly spiny, dark green leaves have irregular, clear yellow margins. Produces a sparse crop of red fruits. Good for hedging or as a specimen plant.

'Handsworth New Silver' is a dense, columnar, female shrub. H 25ft (8m), S 15ft (5m). Branches are purple. Oblong to ovate, spiny, dark green leaves have broad, cream margins. Bears a profusion of bright red fruits. Excellent as a hedge or specimen plant and is good for a small garden.

'Hascombensis' is a slow-growing, dense shrub of unknown sex. H 5ft (1.5m), S 3–4ft (1–1.2m). Has purplish-green young branches and small, ovate, spiny, dark green leaves. Does not produce berries. Suits a rock garden.

'J.C. van Tol' is an open, female shrub that does not require cross-fertilization to produce fruits. H 20ft (6m), S 12ft (4m). Branches are dark purple when young. Ovate, puckered, slightly spiny leaves are dark green. Produces a good crop of red berries. Useful as a hedge or for growing in a tub.

'Madame Briot' (illus. p.94) is a vigorous, bushy, female tree. H 30ft (10m), S 15ft (5m). Young branches are purplish-green. Leaves are large, broadly ovate, spiny and dark green with bright golden borders. Bears scarlet berries.

'Ovata Aurea' is a dense, male shrub. H 15ft (5m), S 12ft (4m). Has reddish-brown young branches and ovate, regularly spiny, dark green leaves with bright golden margins.

'Pyramidalis' is a dense, female tree that does not require cross-fertilization to produce fruits. H 20ft (6m), S 15ft (5m). Has green young branches and narrowly elliptic, slightly spiny, mid-green leaves. Produces abundant scarlet fruits. Suitable for a small garden.

'Pyramidalis Aureomarginata' (illus. p.94) is an upright, female shrub. H 20ft (6m), S 15ft (5m). Young branches are green. Has narrowly elliptic, mid-green leaves with prominent, golden margins and spines on upper half. Bears a large crop of red berries.

'Pyramidalis Fructu Luteo' is a conical, female shrub that broadens with age. H 20ft (6m), S 12ft (4m). Branches are green when young. Has ovate, often spineless, dark green leaves and bears yellow berries. Excellent for a small garden.

'Silver King' see *I.a.* 'Silver Queen'.

'Silver Milkboy' see *I.a.* 'Silver Milkmaid'.

'Silver Milkmaid' (syn. *I.a.* 'Silver Milkboy'; illus. p.94) is a dense, female shrub. H 18ft (5.5m), S 12ft (4m). Ovate, wavy-edged, very spiny leaves are bronze when young, maturing to bright green, each with a central, creamy-white blotch, but tend to revert to plain green. Produces an abundance of scarlet berries. A very attractive specimen plant.

'Silver Queen' (syn. *I.a.* 'Silver King'; illus. p.94) is a dense shrub that, despite its name, is male. H 15ft (5m), S 12ft (4m). Has purple young branches. Ovate, spiny leaves, pink when young, mature to very dark green, almost black, with broad, cream edging.

'Watereriana' (syn. *I.a.* 'Waterer's Gold') is a dense, male bush. H and S 15ft (5m). Young branches are green, streaked with yellow. Ovate, spiny- or smooth-edged leaves are grayish-green, with broad, golden margins. Best grown as a specimen plant.

'Waterer's Gold' see *I.a.* 'Watereriana'.

***I.* x *aquipernyi*.** Evergreen, upright shrub. H 15ft (5m), S 10ft (3m). Has small, ovate, spiny, glossy, dark green leaves with long tips. Berries are large and red. Z6–8

I. cornuta (Horned holly). Evergreen, dense, rounded shrub. H 12ft (4m), S 15ft (5m). Rectangular, dull green leaves are spiny except on older bushes. Produces large, red berries. Z7–9

I. crenata (Box-leaved holly, Japanese holly). Evergreen, spreading shrub or tree. H 15ft (5m), S 10ft (3m). Has very small, ovate, dark green leaves with rounded teeth. Bears glossy, black fruits. Useful for landscaping or as hedging. Z5–7.

'Bullata' see *I.c.* 'Convexa'.

'Convexa' (syn. *I.c.* 'Bullata'; illus. p.94) is a dense, female shrub. H 8ft (2.5m), S 4–5ft (1.2–1.5m). Has purplish-green young branches and ovate, puckered, glossy leaves. Bears glossy, black fruits.

'Fastigiata' is a very useful dense, narrowly erect female form. H 70ft (20m), S 20ft (6m). Produces neat, dark green leaves and small, black berries. Ideal as an accent plant.

'Golden Gem' is a compact, low-growing, shy-flowering female shrub. H 3½ft (1.1m), S 4–5ft (1.2–1.5m). Its golden yellow leaves turn yellow-green in summer. Bears black berries. Best grown in full sun.

'Green Hedger' is an excellent, dark-green leaved selection, ideal as an alternative to box where box blight or box caterpillar is a problem.

'Variegata' is an open, male shrub. H 12ft (4m), S 8ft (2.5m). Ovate leaves are spotted or blotched with yellow, but tend to revert to plain green.

***I.* x *koehneana*.** Evergreen, conical shrub. H 20ft (6m), S 15ft (5m). Young branches are green. Has very large, oblong, spiny, mid-green leaves and red fruits. Z7–9.

'Chestnut Leaf' (illus. p.94) has elliptic, regularly spined, yellow-green leaves reminiscent of sweet chestnut.

I. latifolia (Tarajo holly). Evergreen, upright shrub. H 20ft (6m), S 15ft (5m). Has sturdy, olive-green young branches, very large, oblong, dark green leaves with short spines and plentiful, red fruits. Z7–9

I.* x *meserveae (Blue holly). Group of vigorous, evergreen, dense shrubs. Does not thrive in a maritime climate. Has ovate, glossy, greenish-blue leaves. Z5–9.

'Blue Boy', H 6ft (2m), is a low-growing, male shrub with purplish-green stems and glossy, dark greenish-blue leaves.

Blue Prince ('Conablu') is a male selection, similar to 'Blue Boy', H 12ft (4m), S 8ft (2.5m), with purplish-green stems bearing glossy, bright green leaves. Can be used to pollinate female clones of 'Blue Boy'.

Blue Princess ('Conapri') (illus. p.94), H 10ft (3m), S 4ft (1.2m), is female and has purplish-green young branches, small, ovate, wavy, spiny leaves and an abundance of red fruits.

***I. perado* 'Aurea'.** See *I.* x *altaclerensis* 'Belgica Aurea'.

I. pernyi (illus. p.94). Slow-growing, evergreen, stiff shrub. H 25ft (8m), S 12ft (4m). Has pale green young branches and small, oblong, spiny, dark green leaves. Produces red berries. Z6–9

I. serrata*.** Deciduous, bushy shrub. H 12ft (4m), S 8ft (2.5m). Small, ovate, finely toothed, bright green leaves are downy when young. Pink flowers are followed by small, red fruits. Z5–7. **f. *leucocarpa bears white berries.

I. verticillata (Winterberry; illus. p.94.). Deciduous, dense, suckering shrub. H 6ft (2m), S 4–5ft (1.2–1.5m). Young branches are purplish-green. Produces ovate or lance-shaped, saw-toothed, bright green leaves. Bears abundant, long-lasting, red berries that remain on bare branches during winter. Z5–8

***I. yunnanensis*.** Evergreen, spreading to erect shrub. H 12ft (4m), S 8ft (2.5m). Branches are downy. Small, ovate leaves, with rounded teeth, are brownish-green when young, glossy, dark green in maturity. Produces red berries. Z5–8

ILLICIUM

SCHISANDRACEAE

Genus of evergreen, spring- to early summer-flowering trees and shrubs, grown for their foliage and unusual flowers. Does best in semishade or shade

and moist, neutral to acidic soil. Propagate by semiripe cuttings in summer.
I. anisatum (Chinese anise). Slow-growing, evergreen, conical tree or shrub. H and S 20ft (6m). Produces ovate, aromatic, glossy, dark green leaves. Star-shaped, greenish-yellow flowers, with numerous narrow petals, are borne in midspring. Z7–9
I. floridanum (Purple anise). Evergreen, bushy shrub. H and S 6ft (2m). Lance-shaped, leathery, deep green leaves are very aromatic. Star-shaped, red or purplish-red flowers, with numerous, narrow petals, are produced in late spring and early summer. Z7–9

IMPATIENS

BALSAMINACEAE

Genus of annuals and mainly evergreen perennials and subshrubs, often with brittle, almost succulent, stems. Grown mainly for their flowers, some also for their attractive foliage. Most are excellent as houseplants or for summer bedding, or for containers outdoors. In cold climates, some may be herbaceous. Prefers sun or semishade and moist but not waterlogged soil. Propagate by seed or by stem cuttings in spring or summer. Red spider mite, aphids and whitefly may cause problems in greenhouses.
***I.* Fusion Series Fusion Peach Frost ('Balfuspeafro')** illus. p.325.
***I.* New Guinea Group.** Subshrubby hybrid perennials, derived from *I. hawkeri* (syn. *I. schlechteri*) and usually grown as annuals. Z9–15. **Clockwork Series** cultivars, H 8–10in (20–25cm), S 10–12in (25–30cm), are compact and branching, bearing long-lasting, white, pink, purple, lavender, red, magenta or orange flowers, with some bicolors. **Divine Series** cultivars, H 12in (30cm), S 14in (35cm), are mildew resistant, with whorled, lance-shaped, toothed, mid-green leaves. From late spring to fall, they produce abundant, flattened, white, pink, bright red, dark red or lavender-blue flowers, 2½in (6cm) across. **Divine Series Salsa Mixed** illus. p.307.
***I. niamniamensis*.** Evergreen, bushy perennial. H to 3ft (90cm), S 1ft (30cm). Has reddish-green stems and ovate, toothed leaves to 8in (20cm) long. Showy, 5-petaled, hooded, yellowish-green flowers, 1in (25cm) long, and each with a long, orange, red, crimson or purple spur, are borne in summer–fall. Z13–15. **'Congo Cockatoo'** illus. p.307.
***I. oliveri*.** See *I. sodenii*.
I. repens illus. p.476.
I. sodenii, syn. *I. oliveri*. Evergreen, strong-growing, bushy perennial. H 4ft (1.2m) or more, S 2ft (60cm). Narrowly ovate, toothed leaves, in whorls of 4–10, are 6in (15cm) or more long. Almost flat, white or pale pink to mauve flowers, 2in (5cm) or more across, are produced mainly in summer. Z10–15
***I.* Sunpatiens Series.** Hybrid perennials, usually grown as annuals. H and S 2–3ft (60–90cm) depending on habit; compact, spreading or vigorous. They have whorls of ovate to elliptic, light to dark green leaves, to 3in (8cm) long. Flowers, to 3in (8cm) across, are produced in a range of colors, including white and shades of pink, coral, orange, salmon, red, lilac-pink and lavender-blue. Tolerate full sun. Z10–11
I. tinctoria illus. p.216.
I. walleriana (Busy lizzie). Fast-growing, evergreen, bushy perennial, usually grown as an annual. H and S to 2ft (60cm). Has ovate, fresh green leaves. From spring to fall, produces flattish, 5-petaled, spurred, bright red, pink, purple, violet or white flowers. Z10–15. **Accent Series 'Accent Pink'**, H 8–10in (20–25cm), S 10–12in (25–30cm), is compact and very long-flowering. Bears blush-pink flowers, with dark centers, in summer and fall. Does not tolerate drought. **Athena Series** cultivars are spreading, with double, white, pink, orange or red flowers (some variants are bicolors). **DeZire Series** cultivars, H 10in (25cm), S 12in (30cm), are compact and branching, with flowers in a wide range of colors, including white and shades of pink, red, orange and lavender-blue, some with contrasting centers. **Dreamcoat Mixed**, H and S to 10in (25cm), is compact and vigorous, with white, pink, or red flowers.

IMPERATA

POACEAE/GRAMINAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
***I. cylindrica* 'Rubra'** illus. p.285.

INCARVILLEA

BIGNONIACEAE

Genus of late spring- or summer-flowering annuals and perennials, suitable for rock gardens and borders. Protect crowns with garden compost in winter. Requires sun and fertile, well-drained soil. Propagate by seed in fall or spring.
I. delavayi illus. p.265.
I. mairei illus. p.265.

INDIGOFERA

PAPILIONACEAE/LEGUMINOSAE

Genus of annuals, perennials, deciduous shrubs and, rarely, small trees, grown for their foliage and pealike flowers. Hard frost may cut plants to ground, but they usually regrow from the base in spring. Needs full sun and fertile, well-drained soil. Cut out dead wood in spring. Propagate by softwood cuttings in summer or by seed in fall.
***I. decora*.** Deciduous, bushy shrub. H 2ft (60cm), S 3ft (90cm). Glossy, dark green leaves each have 7–13 narrowly oblong leaflets. Long spikes of pink or white flowers are borne from mid- to late summer. Z7–9
I. dielsiana of gardens. See *I. himalayensis*.
***I. gerardiana*.** See *I. heterantha*.
I. heterantha, syn. *I. gerardiana*, illus. p.133.
I. himalayensis, syn. *I. dielsiana* of gardens, illus. p.152.
***I. pseudotinctoria*.** Deciduous, arching shrub. H 3ft (1m) or more, S 6ft (2m). Each dark green leaf has usually 7–9 ovate leaflets. Long, dense racemes of small, pale pink flowers are borne from midsummer to early fall. Z7–9

INULA

ASTERACEAE/COMPOSITAE

Genus of summer-flowering, clump-forming, sometimes rhizomatous perennials, grown for their daisylike, yellow flowers. Low-growing species and cultivars are ideal for a rock garden; taller species, are good for a wild garden. Most need full sun and moist, well-drained soil. Propagate by seed or division in spring or fall.
***I. acaulis*.** Tuft-forming, rhizomatous perennial. H 2–4in (5–10cm), S 6in (15cm). Has lance-shaped to elliptic, hairy leaves. Solitary, almost stemless, daisylike, golden-yellow flower heads are produced in summer. Good for a rock garden. Z4–9
I. ensifolia illus. p.277.
I. hookeri illus. p.243.
I. macrocephala of gardens. See *I. royleana*.
I. magnifica illus. p.219.
***I. oculis-christi*.** Spreading, rhizomatous perennial. H 1½ft (45cm), S 2ft (60cm). Stems each bear 2 or 3 daisylike, yellow flower heads, which are borne in summer. Has lance-shaped to elliptic, hairy, mid-green leaves. Z4–8
I. royleana, syn. *I. macrocephala* of gardens, illus. p.277.

IOCHROMA

SOLANACEAE

Genus of evergreen, semievergreen and deciduous shrubs and small trees, grown for their flowers. Needs full light or partial shade and fertile, well-drained soil. Water containerized plants freely when in full growth, moderately at other times. Tip prune young plants to stimulate a bushy habit. Cut back flowered stems by half in late winter. Propagate by greenwood or semiripe cuttings in summer. Whitefly and red spider mite are sometimes troublesome.
I. cyaneum, syn. *I. tubulosum*, illus. p.457.
***I. tubulosum*.** See *I. cyaneum*.

IPHEION

ALLIACEAE/LILIACEAE

Genus of perennial bulbs, grown for their star-shaped, blue, white or yellow flowers, which are freely produced in spring. Excellent container plants for a cold greenhouse. Prefers a sheltered situation in dappled sunlight and well-drained soil. Plant in fall; after flowering, dies down for summer. Propagate by offsets in late summer or early fall.
***I. uniflorum* 'Froyle Mill'** illus. p.419. **'Wisley Blue'** is a spring-flowering bulb. H 4–6in (10–15cm), S 2–3in (5–8cm). Has linear, semierect, basal, pale green leaves, which smell of onions if damaged. Leafless stems each produce an upward-facing, pale blue flower, 1¼–1½in (3–4cm) across. Z6–9

IPOMOEA

SYN. MINA, PHARBITIS

CONVOLVULACEAE

Genus of evergreen shrubs, perennials, annuals and soft- or woody-stemmed, twining climbers. Grow in full light and humus-rich, well-drained soil. Water freely when in full growth, less at other times. Support is needed for climbing species. Thin out or cut back congested growth in spring. Propagate by seed in spring or by softwood or semiripe cuttings in summer. Whitefly and red spider mite may cause problems. ⓘ Seeds are highly toxic if ingested.
***I. acuminata*.** See *I. indica*.
I. alba, syn. *Calonyction aculeatum, I. bona-nox* (Moonflower). Evergreen, soft-stemmed, twining climber with prickly stems that exude milky juice when cut. H 22ft (7m) or more. Ovate or sometimes 3-lobed leaves are 8in (20cm) long. Fragrant, tubular, white flowers, to 6in (15cm) long and expanded at the mouths to 6in (15cm) across, open at night in summer. Z12–15
I. batatus Twining, perennial climber, usually grown as an annual. H 10ft (3m) or more. Some cultivars are valued for their edible tubers. Has heart-shaped to ovate, light green to deep purple leaves, 2–4in (5–10cm) long, sometimes 3-lobed and sometimes stained purple at the base. In summer, funnel-shaped, pale purple or occasionally white flowers, with darker purple centers, are produced. Ornamental cultivars seldom flower. Z11. **'Blackie'** illus. p.311. **'Sweet Caroline Green'** has bright yellow-green leaves. Leaves of **'Sweet Caroline Purple'** are deep purple.
***I.* 'Black Tone'.** Compact perennial, usually grown as an annual. H and S to 20in (50cm). Has heart-shaped, dark blackish-purple leaves. Pale purple or white flowers are seldom produced. Z10–11
***I. bona-nox*.** See *I. alba*.
***I. coccinea*.** See *I. hederifolia*.
I. hederifolia, syn. *I. coccinea, Quamoclit coccinea* (Red morning glory, Star ipomoea). Annual, twining climber. H to 10ft (3m). Arrow- or heart-shaped leaves are long-pointed and often toothed. Fragrant, tubular, scarlet flowers, with yellow throats and expanded mouths, are produced in late summer and fall. Z10–11
***I. horsfalliae*.** Strong-growing, evergreen, woody-stemmed, twining climber. H 6–10ft (2–3m). Leaves have 5–7 radiating lobes or leaflets; stalked clusters of funnel-shaped, deep rose-pink or rose-purple flowers, 2½in (6cm) long, are borne from summer to winter. Z13–15. The flowers of **'Briggsii'** are larger and more richly colored than those of the species.
I. indica, syn. *I. acuminata, I. learii* (Blue dawn flower), illus. p.462.
***I. learii*.** See *I. indica*.
I. lobata, syn. *I. versicolor, Quamoclit lobata*, illus. p.202.
I.* x *multifida, syn. *I.* x *sloteri* (Cardinal climber, Hearts-and-honey vine). Annual, twining climber. H 10ft (3m).

Triangular-ovate leaves are divided into 7–15 segments. Tubular, wide-mouthed, crimson flowers with white eyes are borne in summer. Z10–11 (min. 45°F/7°C)

***I. nil* 'Early Call'.** Short-lived, soft-stemmed, perennial, twining climber with hairy stems, best grown as an annual. H to 12ft (4m). Leaves are heart-shaped or 3-lobed. From summer to early fall bears large, funnel-shaped flowers in a range of colors, with white tubes. Z10–11. (min. 45°F/7°C). **'Scarlett O'Hara'** has bright red flowers.

I. purpurea, syn. *Convolvulus purpureus* (Common morning glory). Short-lived, soft-stemmed, perennial, twining climber, best grown as an annual, with hairy stems. H to 15ft (5m). Leaves are heart-shaped or 3-lobed. From summer to early fall produces funnel-shaped, deep purple to bluish-purple or reddish flowers with white throats and bristly sepals. Z10–11 (min. 45°F/7°C)

I. quamoclit, syn. *Quamoclit pennata*, illus. p.202.

***I. rubrocaerulea*.** See *I. tricolor*.

***I.* x *sloteri*.** See *I.* x *multifida*.

I. tricolor, syn. *I. rubrocaerulea* (Morning glory). Fast-growing, twining annual or short-lived perennial. H 10–12ft (3–4m). Has ovate to heart-shaped, slender-tipped, light to mid-green leaves, 1½–4in (4–10cm) long. Funnel-shaped, bright sky-blue to purple flowers, to 3in (8cm) across, with white tubes, golden yellow inside at the bases, are borne in summer. Z10–12. (min. 45°F/7°C). **'Electric Mixed'**, H 4–6ft (1.2–1.8m), has white, pink, mauve, purple or blue flowers throughout summer. **'Flying Saucers'** has variably marbled, white and purple-blue flowers.

'Heavenly Blue' illus. p.205. **'Star of Yalta'**, H 6ft (2m), has neon blue flowers. **'Venetian Mixed'**, H 4–6ft (1.2–1.8m), is vigorous, bearing blue-and-white- or pink-and-white-striped flowers.

***I. tuberosa*.** See *Merremia tuberosa*.

***I. versicolor*.** See *I. lobata*.

IPOMOPSIS

POLEMONIACEAE

Genus of perennials, biennials and annuals, often grown as potted plants for greenhouses and conservatories. Grow in cool, airy conditions with bright light and in fertile, well-drained soil. Propagate by seed sown under glass in early spring or summer.

***I. aggregata*.** Slow-growing biennial with upright, slender, hairy stems. H to 3ft (1m), S 1ft (30cm). Mid-green leaves are divided into linear leaflets. Fragrant, trumpet-shaped flowers, borne in summer, are usually red, sometimes spotted yellow, but may be rose, yellow or white. Z6–9

IRESINE

AMARANTHACEAE

Genus of perennials, annuals and subshrubs, grown for their colorful leaves. Requires bright light to retain leaf color and a good, loamy, well-drained soil. Pinch out tips in growing season to obtain bushy plants. Propagate by stem cuttings in spring.

I. herbstii (Beefsteak plant). Bushy annual or short-lived perennial. H to 2ft (60cm), S 1½ft (45cm). Has red stems and rounded, purplish-red leaves, notched at their tips and 4in (10cm) long, with paler or yellowish-red veins. Flowers are insignificant. Z11–12. **'Aureoreticulata'** illus. p.319.

I. lindenii (Bloodleaf). Bushy perennial. H 2ft (60cm), S 1½ft (45cm). Has lance-shaped, dark red leaves, 2–4in (5–10cm) long. Flowers are insignificant. Z11–12

IRIS

IRIDACEAE

Genus of upright, rhizomatous or bulbous (occasionally fleshy-rooted) perennials, some of which are evergreen, grown for their distinctive and colorful flowers. Each flower has 3 usually large "falls" (pendent or semipendent petals), which in a number of species have conspicuous beards or crests; 3 generally smaller "standards" (erect, horizontal or, occasionally, pendent petals); and a 3-branched style. In many irises, the style branches are petal-like. Unless otherwise stated below, flower stems are unbranched. Green, then brown seed pods are ellipsoid to cylindrical and often ribbed.

Irises are suitable for borders, rock gardens, woodlands, watersides, bog gardens, alpine houses, cold frames and containers. Some groups may thrive only in the specific growing conditions mentioned below. Propagate species by division of rhizomes or offsets in late summer or by seed in fall, named cultivars by division only.

Botanically, irises are divided into a number of sub-genera and sections, and it is convenient, for horticultural purposes, to use some of these botanical names for groups of irises with similar characteristics and requiring comparable cultural treatment. ⓘ All parts may cause severe discomfort if ingested; contact with the sap may irritate skin. See also feature panel pp.224–225.

Rhizomatous irises

These irises have rhizomes as rootstocks, close to or on the surface, or just below ground level, which produce sword-shaped leaves, usually in a basal fan. Each active rhizome produces several new growths every year, and this spread can continue indefinitely. As a rough guide, in 3 years a small iris can attain a spread of 12in (30cm), and a tall one a spread of 2ft (60cm). Rhizomatous irises are categorized in the following groups:

Bearded irises are rhizomatous and have "beards," consisting of numerous often colored hairs, along the center of each fall. In some irises, the end of the beard is enlarged into the shape of a horn. The group covers the vast majority of irises, including many named cultivars, grown in gardens; all are derived from *I. pallida* and related species. Bearded irises thrive in full sun in fairly rich, well-drained, preferably slightly alkaline soil. Some are very tolerant and will grow and flower reasonably in partial shade in poorer soil. For horticultural purposes, various groupings of hybrid bearded irises are recognized, based mainly on the height of the plants in flower. These include: **Miniature Dwarf**, H to 8in (20cm); **Standard Dwarf**, H 8–16in (20–40cm); **Intermediate**, H 16–28in (40–70cm); and **Tall**, H 28in (70cm) or more (this last category may be further subdivided). In general, the shorter the iris, the earlier the flowering season (from early spring to early summer).

Oncocyclus irises are rhizomatous, with very large and often bizarrely colored flowers, one to each stem, which have bearded falls. They require full sun, sharply drained but fairly rich soil and, after flowering, a dry period of dormancy in summer and early fall. Difficult to cultivate successfully, they are best grown in an alpine house or covered frame in climates subject to summer rains.

Regelia irises are closely related to Oncocyclus irises, differing in having bearded standards as well as falls and in having 2 flowers to each stem. They require similar conditions of cultivation, although a few species, such as *I. hoogiana*, have proved easier to grow than Oncocyclus irises. Hybrids between the 2 groups have been raised and are known as **Regeliocyclus** irises.

Beardless irises, also rhizomatous, lack hairs on the falls; most have very similar cultural requirements to bearded irises but some prefer heavier soil. Various groupings are recognized, of which the following are the most widely known.

Pacific Coast irises, a group of Californian species and their hybrids, prefer acidic to neutral soil and grow well in sun or partial shade, appreciating some humus in the soil; they are best grown from seed as they resent being moved.

Spuria irises (*I. spuria* and its relatives) grow in sun or semishade and well-drained but moist soil. A number of species and hybrids prefer moist, waterside conditions; these include the well-known Siberian irises (*I. sibirica* and its relatives) and the **Japanese** water irises, such as *I. ensata* and *I. laevigata*, which may also be grown as border plants, but succeed best in open, sunny, humus-rich, moist positions.

Crested irises are also rhizomatous and have ridges, or cockscomb-like crests, instead of beards. They include the **Evansia** irises, with often widely spreading, creeping stolons. Most have very similar cultivation requirements to bearded irises but some prefer damp, humus-rich conditions.

Bulbous irises

These irises are distinguished by having bulbs as storage organs, sometimes with thickened, fleshy roots, and leaves that are lance-shaped and channeled; 4-sided (more or less square in cross section); or almost cylindrical—unlike the flat and usually sword-shaped leaves of the rhizomatous irises. All are summer dormant. Bulbous irises fall into 3 groups:

Xiphium irises include the commonly grown Spanish, English and Dutch irises, which are excellent for garden decoration and as cut flowers. All are easy to cultivate in sunny, well-drained sites, preferring slightly alkaline conditions, but also growing well on acidic soil. **Spanish** irises are derived from *I. xiphium*, which is variable in flower color, from blue and violet to yellow and white, and produces its channeled leaves in fall.

English irises have been produced from *I. latifolia*, which varies from blue to violet (occasionally white) and produces its channeled leaves in spring. **Dutch** irises are hybrids of *I. xiphium* and the related pale to deep blue *I. latifolia*. They are extremely variable in flower color.

Juno irises have bulbs with thickened, fleshy roots, channeled leaves and very small standards that are sometimes only bristlelike and usually horizontally placed. Although very beautiful in flower, they are mostly difficult to grow successfully, requiring the same cultivation conditions as Oncocyclus irises to thrive. Care must be taken not to damage the fleshy roots when transplanting or dividing clumps.

Reticulata irises include the dwarf, bulbous irises, valuable for flowering early in the year. Unlike other bulbous irises, they have netlike bulb tunics and leaves that are 4-sided, or occasionally cylindrical. With few exceptions (not described here), Reticulata irises grow well in open, sunny, well-drained sites.

***I.* 'Action Front'.** Rhizomatous bearded iris (Tall). H 34in (85cm). From late spring to early summer, produces flowers with mauve-brown standards and deep mahogany-red falls, each with a golden yellow beard and white veins. Z3–9

***I. acutiloba*.** Rhizomatous Oncocyclus iris. H 3–10in (8–25cm). Has narrowly sickle-shaped, mid-green leaves. In late spring, produces solitary, strongly purple-violet- or brownish-purple-veined, white flowers, 2–3in (5–7cm) across, with a dark brown blaze around the beard of each fall. Z13–15

***I. albicans*.** Rhizomatous, bearded iris. H 1–2ft (30–60cm). Has broadly lance-shaped, gray-green leaves, 18in (45cm) long. In late spring, unbranched stems bear 1–3 fragrant white flowers, 3½in (9cm) across, with yellow-tipped white beards. Z6–8

***I.* 'Alida'.** Bulbous Reticulata iris. H 4–6in (10–15cm), S 1½–2½in (4–6cm). In early spring, bears a solitary, fragrant, long-tubed, light blue flower, 1½–2½in (4–6cm) across, with a yellow ridge down each fall center. Z13–15

***I.* 'Alizes'.** Vigorous, rhizomatous, bearded iris (Tall). H 32in (80cm). In summer, large, frilly white flowers are produced with violet-blue falls that pale to white in the center of the petals. The flowers have yellow beards. Z13–15

***I.* 'Amber Queen'.** Dwarf bearded iris. H 10in (25cm). In early summer, bears flowers with deep yellow standards and amber-flushed falls, with golden-yellow beards. Z5–8

***I.* 'Annabel Jane'.** Vigorous, rhizomatous, bearded iris (Tall). H 4ft (1.2m). Well-branched stem produces 8–12 flowers, 6–10in (15–25cm) across, with pale lilac falls and paler standards. Flowers in early summer. Z4–9

***I.* 'Anniversary'.** Rhizomatous, beardless Siberian iris. H 30in (75cm). In mid- and late spring, bears 1–4 white flowers, 2–4in (5–10cm) across, with a yellow stripe in the throat of

each fall. Thrives in moist soil or a bog garden. Z4–9

I. aphylla. Rhizomatous, bearded iris. H 6–12in (15–30cm). Branched stem produces up to 5 pale to dark purple or blue-violet flowers, 2½–3in (6–7cm) across, in late spring and sometimes again in fall if conditions suit. Z3–9

***I.* 'Apricot Drops'.** Free-flowering, rhizomatous, bearded iris (Miniature Tall). H 26in (65cm). Produces apricot flowers from spring to early summer. Falls have darker veins and yellow beards. Z3–9

I. aucheri. Bulbous Juno iris. H 6–10in (15–25cm), S 6in (15cm). Has channeled, mid-green leaves packed closely together on stem, looking somewhat leeklike. In late spring, bears up to 6 blue to white flowers, 2½–3in (6–7cm) across with yellow-ridged falls, in leaf axils. Z6–10

I. aurea. See *I. crocea*.

***I.* 'Az Ap'.** Rhizomatous, bearded iris (Intermediate). H 22in (55cm). In late spring to early summer, bears flowers with cobalt-blue falls, with gentian blue beards. Z6–10

I. bakeriana. Bulbous Reticulata iris. H 4in (10cm), S 2–2½in (5–6cm). In early spring, bears a solitary, long-tubed, pale blue flower, 2–2½in (5–6cm) across, with each fall having a dark blue blotch at the tip and a spotted, deep blue center. Has narrow, almost cylindrical leaves that are very short at flowering time but elongate later. Z3–9

***I.* 'Banbury Beauty'.** Rhizomatous, beardless Pacific Coast iris. H 18in (45cm). In late spring and early summer, branched stem produces 2–10 light lavender flowers, 4–6in (10–15cm) across, with a purple zone on each fall. Z3–9

***I.* 'Before the Storm'.** Rhizomatous, bearded iris (Tall). H 3ft (90cm). Bears slightly fragrant, deep black flowers from late spring to early summer. Z3–9

***I.* 'Berlin Tiger'** (illus. p.225). Rhizomatous, beardless Japanese iris. H 4ft (1.2m). In early summer, branched stems bear 3–5 small, dark yellow flowers, 2in (5cm) across, strongly netted with deep brownish-purple veins. Grow in rich, moist soil. Z3–9

***I.* 'Beverley Sills'.** Rhizomatous, bearded iris (Tall). H 3ft (90cm). Bears coral-pink flowers with tangerine beards in early summer. Falls have finely toothed margins. Z3–9

***I.* 'Black Swan'.** Rhizomatous, bearded iris (Tall). H 3ft (90cm). Bears purplish-black flowers from late spring to early summer. Z3–9

***I.* 'Black Tie Affair'.** Rhizomatous, bearded iris (Tall). H 3ft (90cm). Has dark purplish-black flowers and black beards, from late spring to early summer. Z3–9

***I.* 'Blenheim Royal'.** Rhizomatous, bearded iris (Tall). H 3ft (1m). A vigorous plant with ruffled rich blue, lightly scented flowers in summer. Z3–9

***I.* 'Blue King'.** Rhizomatous, beardless Siberian iris. H 4ft (1.2m). Produces violet-blue flowers from late spring to early summer. Falls have violet-blue veins on a white background. Z3–9

***I.* 'Blue Rhythm'** (illus. p.225). Vigorous, rhizomatous, bearded iris (Tall). H 3½ft (1.1m). In early and mid-summer, produces lemon-scented, well-formed, violet-blue flowers, the veins on the standards slightly paler than those on the broad falls, with their yellow-tipped, white beards. Z3–9

***I.* 'Blue Shimmer'.** Robust, rhizomatous, bearded iris (Tall). H 3ft (90cm). In late spring, freely produces large, fragrant flowers, with white standards stippled violet-blue. Falls are darker violet-blue, with a white center, stippled margin and white beards. Z3–9

***I.* 'Bold Print'** (illus. p.224). Rhizomatous, bearded iris (Intermediate). H 22in (55cm). In late spring or early summer, branched stem bears up to 6 flowers, 5in (13cm) across, with purple-edged, white standards and white falls that are each purple-stitched at the edge and have a bronze-tipped, white beard. Z3–9

***I.* 'Braithwaite'.** Rhizomatous, bearded iris (Tall). H 34in (85cm). Produces flowers with dark purplish-blue falls and lavender-blue standards from late spring to early summer. Falls have purplish-blue veins on a white base and golden yellow beards. Z3–9

I. bucharica (illus. p.224). Vigorous, bulbous Juno iris. H 8–16in (20–40cm), S 5in (12cm). In late spring, produces 2–6 flowers, 2½in (6cm) across, golden-yellow to white with yellow falls, from leaf axils. Has narrowly lance-shaped, channeled, glossy, mid-green leaves scattered up flower stem. Easier to grow than most Juno irises. Z5–9

***I.* 'Bumblebee Deelite'** (illus. p.225). Rhizomatous, bearded iris (Miniature Tall). H 18in (45cm). In late spring and early summer, produces flowers with yellow standards, yellow-margined, maroon falls and orange beards. Z3–9

***I.* 'Butter and Sugar'** illus. p.227.

***I.* 'Butterscotch Kiss'.** Rhizomatous, bearded iris (Tall). H 3ft (90cm). Bears flowers with yellow falls, suffused bronze and with darker veins, from late spring to early summer. Standards are yellow and reflexed. Z3–9

***I.* 'Caesar's Brother'.** Vigorous, rhizomatous, beardless Siberian iris. H 3ft (90cm). In late spring, produces dark purple flowers with bold white markings near the throats. Z3–9

***I.* 'Carnaby'** (illus. p.225). Rhizomatous, bearded iris (Tall). H 3ft (1m). Well-branched stem bears 6–8 flowers, 6–7in (15–18cm) across, with pale pink standards and deep rose-pink falls with orange beards, in early summer. Z4–9

I. chamaeiris. See *I. lutescens*.

***I.* 'Champagne Elegance'** (illus. p.224). Vigorous, rhizomatous, bearded iris (Tall). H 34in (85cm). In early to mid-spring, and again in summer, bears scented, strongly ruffled flowers, with pink-washed, white standards and flaring, apricot-pink falls with darker veining and pale orange beards. Z4–9

***I.* 'Cherry Garden'.** Rhizomatous, bearded iris (Standard Dwarf). H 8in (20cm). Produces flowers with pansy-purple standards and falls with darker veins in early spring. Z3–9

I. chrysographes (illus. p.225). Rhizomatous, beardless Siberian iris. H 16in (40cm). From late spring–early summer, branched stem bears 1–4 deep red-purple or purple-black flowers, 2–4in (5–10cm) across, with gold etching down falls. Prefers a moist site. Z3–9

***I.* 'Clairette'**, syn. *I. reticulata* 'Clairette'. Bulbous Reticulata iris. H 4–6in (10–15cm), S 1½–2½in (4–6cm). In early spring, produces a solitary, fragrant, long-tubed, pale blue flower, 1½–2½in (4–6cm) across, with white-flecked, deep violet falls. Narrow, squared leaves elongate after flowering time. Z5–9

I. clarkei. Rhizomatous, beardless Siberian iris. H 2ft (60cm). From late spring to early summer, solid stem produces 2–3 branches each with 2 blue to red-purple flowers, 2–4in (5–10cm) across, with a violet-veined, white blaze on each fall. Prefers moist conditions. Z4–9

I. confusa (illus. p.224). Evergreen or semievergreen, rhizomatous, crested iris. H 3ft (1m) or more. Bamboolike, erect stem is crowned by a fan of broad leaves. In midspring, widely branched flower stem produces a long succession of up to 30 short-lived, white flowers, 1½–2in (4–5cm) across, with yellow or purple spots around the yellow crests. Prefers well-drained soil and the protection of a south-facing wall. Z4–10. **'Martyn Rix'** has darker, violet-blue flowers. The falls have an orange flare, surrounded by striking, violet-blue veins.

***I.* 'Conjuration'.** Rhizomatous, bearded iris (Tall). H 3ft (90cm). In early summer, bears 6–11 flowers with standards that are white at the margins, suffusing inward to pale violet-blue, and white falls suffusing to deep amethyst-violet at the margins. The white horned beard is yellow tipped. Z4–9

I. cretensis. See *I. unguicularis* subsp. cretensis.

I. cristata (illus. p.224). Evansia iris with much-branched rhizomes. H 4in (10cm). Has neat fans of lance-shaped leaves. In early summer, produces 1 or 2 virtually stemless, long-tubed, lilac, blue, lavender or white flowers, 1¼–1½in (3–4cm) across, with a white patch and orange crest on each fall. Prefers semishade and moist soil; is ideal for peat banks. Z4–10

I. crocea, syn. *I. aurea*. Rhizomatous, beardless Spuria iris. H 3–4ft (1–1.2m). Has long leaves. Strong, erect, sparsely branched stem bears terminal clusters of golden-yellow flowers, 5–7in (12–18cm) across, with wavy-margined falls, in early summer. Resents being disturbed. Z5–8

I. cuprea. See *I. fulva*.

I. danfordiae. Bulbous Reticulata iris. H 2–4in (5–10cm), S 2in (5cm). In early spring, bears usually one yellow flower, 1¼–2in (3–5cm) across, with green spots on each fall. Standards are reduced to short bristles. Narrow, squared leaves are very short at flowering time but elongate later. Tends to produce many small bulblets and requires deeper planting than other Reticulata irises to maintain bulbs at flowering size. Z5–8

***I.* 'Deep Black'** (illus. p.224). Rhizomatous, bearded iris (Tall). H 34in (85cm). In early summer, branched stem produces unruffled flowers, 3–4in (7–10cm) across, with deep purple standards and dark indigo falls, each with an orange-tipped beard. Z5–8

***I.* 'Diabolique'.** Rhizomatous, bearded iris (Tall). H 3ft (1m). Produces ruffled, claret-purple flowers, with bluish-purple beards, from late spring to early summer. Z3–9

I. domestica, syn. *Belamcanda chinensis* (Blackberry lily, Leopard lily). Erect, rhizomatous perennial. H 18–36in (45–100cm). Produces a fan of sword-shaped, semierect leaves. Loosely branched stem bears a succession of flattish, orange-red flowers, 1½–2in (4–5cm) across, heavily spotted dark red, in summer, followed by green seed pods which split to reveal a cluster of shiny, black seeds. Z5–9

I. douglasiana. Evergreen, rhizomatous, beardless Pacific Coast iris. H 10–28in (25–70cm). Leathery, dark green leaves are stained red-purple at base. Branched stem bears 1–3 lavender to purple, occasionally white, flowers, 3–5in (7–12cm) across, with variable, central, yellowish zones on the falls, in late spring and early summer. Z7–9

***I.* 'Dreaming Spires'.** Rhizomatous, beardless Siberian iris. H 3ft (1m). From late spring to early summer, branched stem produces 1–4 flowers, 2–4in (5–10cm) across, with lavender standards and royal-blue falls. Prefers moist soil. Z5–9

***I.* 'Dreaming Yellow'** (illus. p.224). Rhizomatous, beardless Siberian iris. H 32in (80cm). From late spring to early summer, branched stem produces 1–4 flowers, 2–4in (5–10cm) across. Standards are white, falls creamy-yellow fading to white with age. Prefers moist soil. Z4–9

***I.* 'Early Light'.** Rhizomatous, bearded iris (Tall). H 3ft (1m). In early summer, well-branched stem bears 8–10 ruffled, white flowers, 6–7in (15–18cm) across, heavily flushed lemon-yellow on the standards; yellow-veined falls have broad margins flushed slightly deeper lemon-yellow and a yellow beard. Z3–9

***I.* 'Elmohr'.** Rhizomatous, bearded iris (Tall). H 3ft (1m). In early summer, well-branched stem produces 2–5 strongly veined, red-purple flowers, 6–8in (15–20cm) across. Z7–9

***I.* 'English Cottage'** (illus. p.224). Robust, rhizomatous, bearded iris (Tall). H to 3ft (1m). In mid- to late spring, and again in summer or early fall, produces large, white flowers with the margins of both standards and falls washed pale blue-violet. Has deeper veining at the base of the falls and yellow-tipped, white beards. Z3–9

I. ensata, syn. *I. kaempferi* (Japanese flag)illus. p.441. **'Crystal Halo'**, H 3ft (90cm), bears large, deep violet-blue flowers, with a white rim and a bright yellow blaze at the base of each fall from early to midsummer. **'Freckled Geisha'** bears flowers that have ruffled white falls with broad violet margins and white standards. **'Frilled Enchantment'**, H 3½ft (1.1m), bears flowers with white standards and falls with a narrow rose-red border from early to midsummer. Slightly ruffled petals have yellow, starlike markings at the base. **'Moonlight Waves'** (illus. p.224), H 3ft (90cm), is strong-growing and produces large, open, spreading, white flowers, with lime-green blazes at the base of each petal. **'Murasme'**, H 3ft (1m), bears flowers with lavender-edged white standards from early to midsummer. White falls have lavender hints and a bright, golden yellow blaze at their base. **'Rose Queen'** (syn. *I. laevigata* 'Rose Queen'; illus. p.224),

H to 3ft (1m), is strong-growing and bears large, soft pink flowers, with deeper pink veining and a yellow blaze at the base of each fall. **'Variegata'**, H 30in (75cm), has narrow leaves, with bright white margins. Z3–9

I. extremorientalis. See *I. sanguinea*.

***I.* 'Eyebright'** (illus. p.225). Rhizomatous, bearded iris (Standard Dwarf). H 12in (30cm). In late spring, produces 2–4 bright yellow flowers, 3–4in (7–10cm) across, each with a brown zone on the falls surrounding the beard, on usually an unbranched stem. Z3–9

***I.* 'Feu du Ciel'.** Rhizomatous, bearded iris (Tall). H 3ft (90cm). Bears bright orange flowers, with dark orange beards, from late spring to early summer. Z3–9

***I.* 'Flight of Butterflies'.** Elegant, rhizomatous, beardless Siberian iris. H 3ft (90cm). From early to midsummer, bears delicate flowers with violet-blue standards and white falls veined deep violet-blue. Z4–9

I. florentina. See *I. germanica* 'Florentina'.

I. foetidissima (Stinking gladwin, Stinking iris; illus. p.225). Evergreen, rhizomatous, beardless iris. H 12–36in (30–90cm). Branched stem bears up to 9 yellow-tinged, dull purple or occasionally pure yellow flowers, 2–4in (5–10cm) across, from early to midsummer. Cylindrical seed pods open to reveal rounded, bright scarlet fruits throughout winter. Thrives in a bog or water garden, although tolerates drier conditions. Z4–9

***I.* 'Forever Blue'.** Rhizomatous, bearded iris (Standard dwarf). H 12in (30cm). Pale violet-blue flowers, with darker violet-blue beards are borne in early spring. Falls and standards have conspicuous green veins. Z3–9

***I. forrestii*.** Rhizomatous, beardless Siberian iris. H 6–16in (15–40cm). From late spring to early summer, unbranched stem bear 1 or 2 fragrant, yellow flowers, 2–2½in (5–6cm) across, with black lines on each fall and occasionally brownish-flushing on standards. Has linear, glossy, mid-green leaves, gray-green below. Prefers moist, non-alkaline soil. Z6–9

I. fosteriana. Bulbous Juno iris. H 4–6in (10–15cm), S 2½in (6cm). In spring, produces 1 or 2 long-tubed flowers, 1½–2in (4–5cm) across, with downward-turned, rich purple standards, which are larger than those of most Juno irises, and creamy-yellow falls. Has narrowly lance-shaped, channeled, silver-edged, mid-green leaves scattered on flower stem. Difficult to grow and is best in an alpine house or cold frame. Z6–9

***I.* 'Frank Elder'.** Bulbous Reticulata iris. H 2½–4in (6–10cm), S 2–3in (5–7cm). In early spring, produces a solitary, very pale blue flower, 2½–3in (6–7cm) across, suffused pale yellow and veined and spotted darker blue. Narrow, squared leaves are very short at flowering time but elongate later. Z3–9

***I.* 'Frost and Flame'** (illus. p.224). Strong-growing, rhizomatous, bearded iris (Tall). H 3ft (90cm). In early to mid-spring, bears fragrant, glistening, white flowers with ruffled standards, rounded falls and bright orange beards. Z3–9

I. fulva, syn. *I. cuprea*, illus. p.439.

***I.* 'Fulvala'.** See *I.* x *fulvala*.

I.* x *fulvala, syn. *I.* 'Fulvala'. Rhizomatous, beardless iris. H 18in (45cm). Zigzag stems bear 4–6 (occasionally more) velvety, deep red-purple flowers, 2–5in (5–12cm) across, with 2 flowers per leaf axil, in summer. Has a yellow blaze on each fall. Thrives in a bog or water garden. Z6–9

***I.* 'Geisha Gown'.** Robust, rhizomatous, beardless Japanese iris. H 3ft (90cm). In mid- and late spring, produces large, delicate, double, white ruffled flowers with dark violet-blue veining and a central, deep purple-violet center. Z3–9

I. germanica (Common German flag). Rhizomatous, bearded iris. H 2–4ft (0.6–1.2m). Sparsely branched stem produces up to 6 yellow-bearded, blue-purple or blue-violet flowers, 4–6in (10–15cm) across, in late spring and early summer. Z3–8.

'Florentina' (syn. *I. florentina*, *I.g.* var. *florentina*; Orris root; illus. p.224), has strongly scented, white flowers.

***I.* 'Gingerbread Man'.** Rhizomatous, bearded iris (Standard dwarf). H 14in (35cm). Has deep brown flowers with blue-purple beards in mid- and late spring. Z3–9

***I.* 'Golden Edge'.** Rhizomatous, beardless Siberian iris. H 30in (75cm). In late spring and early summer, bears flowers with violet-blue standards and violet-blue falls with a conspicuous yellow, violet-veined blaze at the base. The slightly ruffled falls are edged with gold. Z3–9

I. graeberiana. Bulbous Juno iris. H 6–14in (15–35cm), S 2½–3in (6–8cm). In late spring, bears 4–6 bluish-lavender flowers, 2½–3in (6–8cm) across, with a white crest on each fall, from the leaf axils. Lance-shaped, channeled leaves are white-margined, glossy, mid-green above, grayish-green below, and scattered up flower stem. Easier to grow than most Juno irises. Z6–9

***I. graminea*.** Rhizomatous, beardless Spuria iris. H 8–16in (20–40cm). In late spring, narrowly lance-shaped leaves partially hide up to 10 plum-scented flowers, 2–5in (5–12cm) across, with wine-purple standards and heavily veined, violet-blue falls, borne on flattened, angled stem. Resents being disturbed. Z6–9

***I.* 'Green Spot'** (illus. p.224). Rhizomatous, bearded iris (Standard Dwarf). H 12in (30cm). Branched stems bear 2–4 ivory-white flowers, 4in (10cm) across, with an olive-green mark and a yellow throat on each fall, in late spring. Z6–9

***I.* 'Harpswell Happiness'.** Rhizomatous, beardless Siberian iris. H 30in (75cm). Produces ruffled, creamy-white flowers with creamy-white falls in late spring and early summer. The falls have pale, greenish-yellow veins and a bright yellow basal area. Z3–8

***I.* 'Harriet Halloway'.** Rhizomatous, bearded iris (Tall). H 32in (80cm). Bears violet-blue flowers from late spring to early summer. Falls have yellow beards and darker veins. Z3–9

I. histrioides. Bulbous Reticulata iris. H 2½–4in (6–10cm), S 2½–3in (6–7cm). In early spring, produces solitary flowers, 2½–3in (6–7cm) across, which vary from light to deep violet-blue. Each fall is lightly to strongly spotted with dark blue and has white marks and a yellow ridge down center. Narrow, squared leaves are very short at flowering time but elongate later. Z5–8. **'Lady Beatrix Stanley'** has light blue flowers and heavily spotted falls. **'Major'** has darker blue-violet flowers.

***I.* 'Holden Clough'** (illus. p.225). Rhizomatous, beardless iris. H 20–28in (50–70cm). In early summer, branched stem bears 6–12 yellow flowers, each 2in (5cm) across, with very heavy, burnt-sienna veining. Excellent in a bog or water garden, but also grows well in any rich, well-drained soil. Z5–8

***I.* 'Honeyplic'.** Rhizomatous, bearded iris (Intermediate). H 18in (45cm). Bears flowers with cream falls, surrounded by a honey-colored margin and darker veins, from spring to early summer. The standards are honey-brown. Z3–9

I. hoogiana (illus. p.224). Regelia iris with sturdy rhizomes. H 16–24in (40–60cm). Produces 2 or 3 scented, delicately veined, lilac-blue flowers, 3–4in (7–10cm) across, in late spring and early summer. Is relatively easy to cultivate. Z7–9

***I. iberica*.** Rhizomatous Oncocyclus iris. H 6–8in (15–20cm). Has narrow, strongly curved, gray-green leaves. Solitary, bicolored flowers, 4–5in (10–12cm) across, are produced in late spring. Standards are white, pale yellow, or pale blue with slight brownish-purple veining; spoon-shaped falls are white or pale lilac, spotted and strongly veined brownish-purple. Grows best in a frame or alpine house. Z7–9

I. innominata. Evergreen or semievergreen, rhizomatous, beardless Pacific Coast iris. H 6–10in (16–25cm). Stem bears 1 or 2 flowers, 2½–3in (6.5–7.5cm) across, from late spring to early summer. Varies greatly in color from cream to yellow or orange and from lilac-pink to blue or purple; falls are often veined with maroon or brown. Z7–9

***I.* 'Jane Phillips'.** Rhizomatous, bearded iris (Tall). H 3ft (90cm). In late spring and early summer, produces pale blue flowers with deeper blue veining and white beards. Z3–9

I. japonica (illus. p.224). Vigorous, rhizomatous Evansia iris with slender stolons. H 18–32in (45–80cm). Has fans of broadly lance-shaped, glossy leaves. In late spring, a branched flower stem bears a long succession of flattish, frilled or ruffled, pale lavender or white flowers, ½–3in (1–8cm) across, marked violet around an orange crest on each fall. Prefers the protection of a sheltered, sunny wall. Z7–9. **'Variegata'**, H 28in (70cm), has mid-green leaves boldly striped with white.

I. kaempferi. See *I. ensata*.

***I.* 'Katharine Hodgkin'** (illus. p.225). Bulbous Reticulata iris. H 2½–4in (6–10cm), S 2–3in (5–7cm). Similar to *I.* 'Frank Elder', but has yellower flowers, 2½–3in (6–7cm) across, suffused pale blue, lined and dotted with dark blue. Flowers in early spring. Z5–8

***I.* 'Kent Pride'** (illus. p.225). Strong-growing, rhizomatous, bearded iris (Tall). H 3ft (90cm). In midspring, produces deep chestnut-brown and white flowers; the standards are faintly suffused yellow and the falls have a white central patch, yellow beards and yellow and brown veining, surrounded by chestnut-brown margins. Z3–9

I. kerneriana. Rhizomatous, beardless Spuria iris. H 10in (25cm). Has very narrow, grasslike leaves. Strong, erect-branched stem bears 2–4 soft lemon- or creamy-yellow flowers, 2–5in (5–12cm) across, from each pair of bracts, in early summer. Resents being disturbed. Z6–9

***I.* 'Knick Knack'.** Rhizomatous, bearded iris (Miniature dwarf). H 8in (20cm). In spring and early summer, produces flowers with white standards and falls with bold blue-violet veins at the margins, white beard and violet styles. The falls have a golden yellow throat. Z3–9

I. korolkowii. Regelia iris with sturdy rhizomes. H 16–24in (40–60cm). From late spring to early summer, each spathe encloses 2 or 3 delicately blackish-maroon- or olive-green-veined, creamy-white or light purple flowers, 2½–3in (6–8cm) across. Best grown in a bulb frame. Z8–9

I. laevigata. Rhizomatous, beardless Japanese iris. H 2–3ft (60–90cm) or more. Sparsely branched stem produces 2–4 blue, blue-purple or white flowers, 2–5in (5–12cm) across, from early to midsummer. Related to *I. ensata* but has smooth, not ridged leaves. Grows well in sun or semishade in moist conditions or in shallow water. Z3–9. **'Rose Queen'** see *I. ensata* 'Rose Queen'. **'Snowdrift'** has single, white flowers marked yellow at the bases of the falls. **'Variegata'**, H 10in (25cm), has white-and-green-striped leaves and often repeat flowers in early fall.

***I.* 'Langport Storm'.** Strong-growing, rhizomatous, bearded iris (Intermediate). H 18in (45cm). In midspring, produces neat, smoky-chartreuse blooms, the falls overlaid with deep red-brown patches suffused and veined yellow, with cream beards. Z5–9

***I.* 'Langport Wren'.** Free-flowering, rhizomatous, bearded iris (Intermediate). H 26in (65cm). Bears claret-red flowers, with brown beards from spring to early summer. Z3–9

I. latifolia, syn. *I. xiphioides* (English iris). Bulbous Xiphium iris (English). H 32in (80cm), S 6in (15cm). In late spring and summer, 1 or 2 blue to deep violet flowers, 3–4in (8–10cm) across, with a yellow stripe down center of each very broad fall, are produced from the bracts. Lance-shaped, channeled, mid-green leaves are scattered up flower stem. Z5–8. Flowers of **'Mont Blanc'** are pure white.

I. lazica. Evergreen, rhizomatous, beardless iris. H 6–10in (15–25cm). Has arching fans of broad, bright green leaves. In early spring, bears stemless, long-tubed, lavender-blue flowers. Falls are white in the lower halves, spotted and veined lavender, each with a central yellow stripe. Thrives in slight shade in moist soil. Z8–10

I. lutescens, syn. *I. chamaeiris*. Fast-growing, very variable, rhizomatous, bearded iris. H 2–12in (5–30cm). Branched stem produces 1 or 2 yellow-bearded, violet, purple, yellow, white or bicolored flowers, 2½–3in (6–8cm) across, in early summer. Z7–9. **'Nancy Lindsay'** has scented, yellow flowers.

I. magnifica (illus. p.224). Bulbous Juno iris. H 1–2ft (30–60cm), S 6in (15cm). In late spring, produces 3–7 very pale lilac flowers, 2½–3in (6–8cm) across, with a central, yellow area on each fall, from leaf axils. Bears scattered, lance-shaped, channeled, glossy, mid-green leaves. Z6–8

***I.* 'Making Eyes'.** Rhizomatous, bearded iris (Standard Dwarf). H 12–14in (30–35cm). In early spring, produces neat flowers with pale lemon-white standards, narrow, white-margined, dark purple-violet falls and yellowish-white beards. Z3–8

***I.* 'Mary McIlroy'.** Rhizomatous, bearded iris (Intermediate). H 16–20in (40–50cm). In early to midspring, bears bright yellow blooms, the standards veined slightly deeper yellow, with darker veins on the falls and lemon-yellow beards. Z3–8

***I.* 'Matinata'.** Rhizomatous, bearded iris (Tall). H 3ft (1m). In early summer, well-branched stem produces 6–9, occasionally to 12 flowers, 6in (15cm) across, that are dark purple-blue throughout. Z3–9

***I.* 'Maui Moonlight'.** Rhizomatous, bearded iris (Intermediate). H 26in (65cm). Has fragrant, ruffled, lemon yellow flowers in midspring. Falls have slightly darker veins and yellow beards. Z3-9

***I.* 'Mer du Sud'.** Rhizomatous, bearded iris (Tall). H 32in (80cm). In early summer, produces flowers with sea blue standards and falls, and light blue beards. Z3–9

I. missouriensis (Missouri flag). Very variable, rhizomatous, beardless Pacific Coast iris. H to 30in (75cm). In late spring or early summer, branched stem produces 2 or 3 pale blue, lavender, lilac, blue or white flowers, 2–3in (5–8cm) across, in each spathe. Falls are veined and usually have a yellow blaze. Z3–9

***I.* 'Mountain Lake'** (illus. p.224). Rhizomatous, beardless Siberian iris. H 3ft (1m). From late spring to early summer, branched stem produces 1–4 mid-blue flowers, 2–4in (5–10cm) across, with darker veining on falls. Prefers moist soil. Z3–8

***I.* 'Natascha'** illus. p.415.

***I. ochroleuca*.** See *I. orientalis*.

***I.* 'Ola Kala'** (illus. p.225). Robust, rhizomatous, bearded iris (Tall). H 3ft (1m). Produces neat, scented, rich deep yellow flowers; the falls have darker yellow bases and yellow beards. Z3–9

I. orientalis, syn. *I. ochroleuca* (illus. p.224). Rhizomatous, beardless Spuria iris. H to 3ft (90cm). In late spring, each stem, usually with one branch, bears 3–5 white flowers, 3–4in (8–10cm) across. Falls are white with yellow centers. Leaves are often present over winter. Z6–9

I. orientalis of gardens. See *I. sanguinea*.

***I.* 'Orinoco Flow'.** Rhizomatous, bearded iris (Intermediate). H 25in (63cm). In mid- and late spring, produces strongly ruffled white flowers, with margins heavily marked in deep purple, and navy-blue beards. Z3–9

I. pallida (Dalmatian iris). Rhizomatous, bearded iris. H 28–36in (70–90cm) or more. In late spring and early summer, produces 2–6 scented, lilac-blue flowers, 3–5in (8–12cm) across and with yellow beards, from silvery spathes on strong, branched stems. Z4–9. **'Aurea Variegata'** see *I.p.* 'Variegata'. **'Variegata'** (syn. *I.p.* 'Aurea Variegata') has striped green and yellow leaves.

***I.* 'Papillon'.** Clump-forming, rhizomatous, beardless Siberian iris. H 3ft (90cm). In late spring and early summer, bears flowers with mid-blue standards and pale-blue styles. Falls are mid-blue, with a yellowish-brown throat, marked by bold, blue veins. Z3–8

***I.* 'Perry's Blue'** (illus. p.225). Robust, rhizomatous, beardless Siberian iris. H 3ft (1m). In late spring and early summer, produces neat, pale purplish-blue flowers, with noticeably deeper blue veins. Slightly twisted standards and broad, rounded falls are white margined and creamy-white near the bases, and have dark yellow markings in the throats. Z3–8

***I.* 'Pixie'** illus. p.418.

***I.* 'Pogo'.** Rhizomatous, bearded iris (Standard Dwarf). H 12in (30cm). Bright yellow flowers are borne in early spring, Each fall has a large reddish-brown blotch, and a yellow beard. Z3–9

***I.* 'Professor Blaauw'.** Bulbous Xiphium iris (Dutch). H 32in (80cm), S 6in (15cm). From spring to early summer, produces 1 or 2 rich violet-blue flowers, 2½–3in (6–8cm) across. Narrowly lance-shaped, channeled, mid-green leaves are scattered up flower stem. Z3–9

I. pseudacorus (Yellow flag; illus. p.225). Robust, rhizomatous, beardless iris. H to 6ft (2m). From early to midsummer, branched stem produces 4–12 golden-yellow flowers, 2–5in (5–12cm) across, usually with brown or violet veining and a darker yellow patch on the falls. Leaves are broad, ridged and grayish-green. Prefers semishade and thrives in a water garden. Z5–8. **var. *bastardii*** illus. p.445. **'Crème de la Crème'** has creamy white flowers with purple markings. **'Roy Davidson'** has brown-veined yellow flowers with brown patches on the falls. **'Variegata'** has yellow-and-green-striped foliage in spring, often turning green before flowering.

I. pumila (Dwarf bearded iris). Rhizomatous, bearded iris. H 4–6in (10–15cm). In midspring, produces a ½in (1cm) long flower stem bearing 2 or 3 long-tubed flowers, 1–2in (2.5–5cm) across, varying from violet-purple to white, yellow or blue, with yellow or blue beards on the falls. Prefers very well-drained, slightly alkaline soil. Z4–9

***I.* 'Rajah'.** Rhizomatous, bearded iris (Tall). H 3ft (90cm). A striking iris, bearing flowers with yellow standards and reddish-brown falls marked with yellow stripes in early summer. The falls have a yellow beard. Z3–9

***I.* 'Raspberry Blush'.** Rhizomatous bearded (Intermediate). H 2ft (60cm). Produces bi-tone flowers in spring and early summer. Standards are slightly ruffled and raspberry-pink with darker veins. The falls have a dark raspberry center and paler raspberry-pink margins, with a dark orange beard. Z3–9

***I. reticulata*.** Bulbous Reticulata iris. H 4–6in (10–15cm), S 1½–2½in (4–6cm). In early spring, produces a solitary, fragrant, long-tubed, deep violet-purple flower, 1½–2½in (4–6cm) across, with a yellow ridge down each fall center. Narrow, squared leaves elongate after flowering time. Z5–8. **'Cantab'** (illus. p.225) has clear pale blue flowers with a deep yellow ridge on each fall. **'Clairette'** see *I.* 'Clairette'. Flowers of **'J.S. Dijt'** are reddish-purple with an orange ridge on each fall. **'Violet Beauty'** see *I.* 'Violet Beauty'.

***I.* 'Ringo'** (illus. p.224). Vigorous, rhizomatous, bearded iris (Tall). H 3ft (90cm). In late spring and early summer, produces lightly ruffled flowers with white standards touched purple on the midribs and dark reddish-purple falls with narrow, white margins and orange beards. Z5–8

***I.* x *robusta* 'Gerald Darby'** (illus. p.224). Rhizomatous, beardless Species Hybrid iris. H 32in (80cm). In late spring and early summer, unbranched purplish-green stems produce up to 4 violet-blue flowers, with deep yellow signals on the falls. Leaves are stained purple at the bases. Prefers wet conditions. Z4–9

***I. rosenbachiana*.** Bulbous Juno iris. H 4–6in (10–15cm), S 2½in (6cm). In spring, produces 1 or 2 long-tubed flowers, 1½–2in (4–5cm) across, with small, downward-turned, rich purple standards and reddish-purple falls, each with a yellow ridge in the center. Has lance-shaped, channeled, mid-green leaves in a basal tuft. Difficult to grow; best grown in an alpine house or cold frame. Z4–9

***I.* 'Ruffled Velvet'.** Rhizomatous, beardless Siberian iris. H 22in (55cm). In early summer, produces 2 or 3 red-purple flowers marked with yellow. Z4–9

***I.* 'Sable'.** Rhizomatous, bearded iris (Tall). H 3ft (90cm). Has grayish-green foliage. In early summer, produces flowers with large, dark violet blue standards and almost black falls, with white markings near the throat. Z3–9

***I.* 'Salamander Crossing'.** Rhizomatous, beardless Siberian iris. H 3½ft (1.1m). Flowers from early to late spring. Pale yellow falls are speckled with lavender-blue, strongly marked with lavender-blue veins, and are a deeper yellow toward the throats. Pale lavender-blue standards have darker lavender-blue speckles. Z3–9

I. sanguinea, syn. *I. extremorientalis, I. orientalis* of gardens. Rhizomatous, beardless Siberian iris. H to 3ft (90cm). From late spring to early summer, each branched stem produces 2 or 3 deep purple or red-purple flowers, 2–4in (5–10cm) across, from each set of bracts. Falls are red-purple with white throats finely veined purple. Z3–9. **'Snow Queen'** (illus. p.224) has pure white flowers with yellow-green marks at the bases of the falls.

I. setosa illus. p.441.

***I.* 'Shepherd's Delight'.** Rhizomatous, bearded iris (Tall). H 3ft (1m). In early summer, well-branched stem produces 6–10 clear pink flowers, 6–7in (15–18cm) across, with a yellow cast. Z3–8

I. sibirica (Siberian flag; illus. p.441). Rhizomatous, beardless Siberian iris. H 20–48in (50–120cm). From late spring to early summer, branched stem produces 2 or 3 dark-veined, blue or blue-purple flowers, 2–4in (5–10cm) across, from each spathe. Prefers moist or boggy conditions. Z3–8

***I.* 'Silvery Beauty'.** Bulbous iris (Dutch). H 28in (70cm). Bears violet blue flowers in spring and early summer. The falls are white, with a bright yellow center. Best planted in drifts. Z5–9

***I. sintenisii*.** Rhizomatous, beardless Spuria iris. H 12in (30cm). Has linear, dark green leaves. In late spring, bears 2 white flowers, densely veined blue-purple. Z6–8

***I. sisyrinchium*.** *See Moraea sisyrinchium.*

***I.* 'Soft Blue'** (illus. p.225). Robust, rhizomatous, beardless Siberian iris. H 30in (75cm). In early to midspring, bears pale blue flowers; the long, arching falls have yellow basal markings and darker blue veins. Z3–9

***I. spuria*.** Very variable, rhizomatous, beardless Spuria iris. H 20–36in (50–90cm). Strong, erect-branched stem bears 2–5 pale blue-purple, sky-blue, violet-blue, white or yellow flowers, 2–5in (5–12cm) across, in early summer. Prefers moist soil. Z6–9

***I.* 'Stepping Out'.** Rhizomatous, bearded iris (Tall). H 3ft (1m). Well-branched stem bears 8–11 white flowers, 5½–6in (14–15cm) across, with deep blue-purple marks in early summer. Z3–9

***I. stylosa*.** See *I. unguicularis*.

***I.* 'Superstition'.** Rhizomatous, bearded iris (Tall). H 3ft (90cm). Produces striking, dark purple-brown flowers, with blue-black beards, in early summer. Z3–9

***I.* 'Supreme Sultan'.** Vigorous, rhizomatous, bearded iris (Tall). H 3ft (1m). In late spring and early summer, bears large, ruffled flowers, with deep golden-yellow standards, rich dark red-brown falls that are paler at the margins, and deep yellow beards. Z3–8

I. susiana (Mourning iris). Rhizomatous Oncocyclus iris. H 14–16in (35–40cm). In late spring, produces a solitary, grayish-white flower, 3–6in (8–15cm) across, heavily veined deep purple. Standards appear larger than incurved falls, which each bear a black blaze and a deep purple beard. Best in a cold frame or alpine house. Z7–9

***I.* 'Sweet Musette'.** Vigorous, rhizomatous, bearded iris (Tall). H 36–38in (90–95cm). In mid- to late spring, produces large, ruffled, frilly flowers, with lavender-flushed, peach-pink standards, purplish-pink falls and orange beards. Z3–8

I. tectorum (Japanese roof iris, Wall flag). Evansia iris with sturdy rhizomes. H 10–14in (25–35cm). Has fans of broadly lance-shaped, ribbed leaves. In early summer, sparsely branched stem produces 2–3 darker-veined, bright lilac flowers, ½–3in (1–8cm) across with a white crest on each fall, from each spathe. Prefers a sheltered, sunny site near a south- or west-facing wall. Z5–9

***I. tenax*.** Rhizomatous, beardless Pacific Coast iris. H 6–12in (15–30cm). From late spring to early summer, produces 1 or 2 deep purple to lavender-blue flowers, 3–5in (8–12cm) across, often with yellow-and-white marking on falls. White, cream and yellow variants also occur. Narrow, dark green leaves are stained pink at base. Z5–9

***I.* 'Thornbird'.** Rhizomatous, bearded iris (Tall). H 3ft (90cm). In early summer, bears up to 7 flowers, with pale greenish-white standards and greenish-brown falls overlaid with deep violet lines. Long, horned beard is violet, tipped with mustard-yellow. Z3–9

***I.* 'Titan's Glory'.** Robust, rhizomatous, well-branched, bearded iris (Tall). H to 3ft (1m). Produces very large, deep purple-blue flowers, with an almost silken texture, in midspring. Z3–8

***I.* 'Tropic Night'** (illus. p.225). Strong-growing, rhizomatous, beardless Siberian iris. H 3ft (90cm). In late spring and early summer, produces deep violet-blue flowers; upright standards and rounded falls have strong, white feathering and

veining near the bases and are touched yellow around the throats. Z3–8
I. tuberosa, syn. *Hermodactylus tuberosus* (Widow iris), illus. p.406.
I. unguicularis, syn. *I. stylosa* (Algerian iris, Algerian winter iris, Winter iris). Evergreen, rhizomatous, beardless iris. H to 8in (20cm). Has narrow, tough leaves. Almost stemless, primrose-scented, lilac flowers, 2–3in (5–8cm) across with yellow centers to the falls and with very long tubes, are produced from late fall to early spring. Buds are prone to slug attack. Excellent for cutting. Prefers a sheltered site against a south- or west-facing wall. Z7–9. **'Mary Barnard'** has deep violet-blue flowers. **subsp. *cretensis*** (syn. *I. cretensis;* illus. p.224), H 4in (10cm), has violet or lavender-blue standards and white or yellow falls with violet veining at the bases and clear violet tips. Flowers of **'Walter Butt'** are pale silvery-lavender.
I. variegata (Variegated iris; illus. p.225). Rhizomatous, bearded iris. H 12–20in (30–50cm). In early summer, branched stem produces 3–6 flowers, 2–3in (5–8cm) across, with bright yellow standards and white or pale yellow falls, heavily veined red-brown and appearing striped. Z5–9
I. verna. Rhizomatous, beardless iris. H 2in (5cm). In midspring, produces 1, occasionally 2, lilac-blue flowers, 1–2in (2.5–5cm) across, with a narrow, orange stripe in the center of each fall. Prefers semishade and moist but well-drained soil. Z5–9
I. versicolor (Blue flag, Wild iris) illus. p.442. Prefers partial shade and thrives in moist soil or in shallow water. Z5–9. **'Kermesina'** bears red-purple flowers.
***I.* 'Violet Beauty'**, syn. *I. reticulata* 'Violet Beauty'. Bulbous Reticulata iris. H 4–6in (10–15cm), S 1½–2½in (4–6cm). In early spring, bears a solitary, fragrant, long-tubed, deep violet-purple flower, 1½–2½in (4–6cm) across, with an orange ridge down the center of each fall. Narrow, squared leaves elongate after flowering time. Z5–9
I. warleyensis. Bulbous Juno iris. H 8–18in (20–45cm), S 7–3in (8cm). In spring, produces up to 5 pale lilac or violet-blue flowers, 2–3in (5–7cm) across, in leaf axils. Each fall has a darker blue apex and a yellow stain in the center. Has scattered, lance-shaped, channeled, mid-green leaves. Best in an unheated greenhouse. Z6–8
***I.* 'White City'.** Vigorous Rhizomatous, bearded iris (Tall). H 3ft (90cm). Bears very pale blue, fragrant flowers, fading to white, in early summer. The falls have a yellow beard. Z3–9
***I.* 'White Swirl'.** Rhizomatous, beardless Siberian iris. H 3ft (1m). In early summer, produces pure white flowers, flushed golden yellow at the bases, with rounded, flaring petals. Z3–9
I. winogradowii (illus. p.225). Bulbous Reticulata iris. H 2½–4in (6–10cm), S 2½–3in (6–7cm). Solitary pale primrose-yellow flower, 2½–3in (6–7cm) across, spotted green on falls, is produced in early spring. Narrow, squared leaves are short at flowering time but elongate later. Z6–8
***I.* 'Winter Olympics'.** Rhizomatous, bearded iris (Tall). H 3ft (90cm). In early summer, produces striking, pure white flowers, with slightly ruffled edges to standards and a white beard. Z3–9
I. xiphioides. See *I. latifolia*.
I. xiphium. Bulbous Xiphium iris (Spanish). H to 32in (80cm), S 6in (15cm). Bears 1 or 2 blue or violet, occasionally yellow or white, flowers, 2½–3in (6–8cm) across, with central orange or yellow marks on the falls, in spring and early summer. Narrowly lance-shaped, channeled, mid-green leaves are scattered on flower stem. Z5–9. Flowers of **'Lusitanica'** are pure yellow.

ISATIS

BRASSICACEAE/CRUCIFERAE

Genus of summer-flowering annuals, biennials and perennials. Needs sun and fertile, well-drained soil. Ideal for a wild garden; *I. tinctoria* is suitable for a herb garden. Propagate by seed in fall or spring.
I. tinctoria (Woad). Vigorous, upright biennial. H to 4ft (1.2m), S 1½ft (45cm). Has oblong to lance-shaped, glaucous leaves and, in summer, large, terminal panicles of 4-petaled, yellow flowers. Z4–8

ISMELIA

ASTERACEAE/COMPOSITAE

Genus of one species of annuals, grown for its attractive, daisylike flower heads. Needs full sun and well-drained soil. Suitable for a border or wild flower meadow. Propagate by seed in spring.
I. carinata, syn. *Chrysanthemum carinatum, C. tricolor*. **'Monarch Court Jesters'** is a fast-growing, erect, branching annual. H 2ft (60cm), S 1ft (30cm). Has feathery, gray-green leaves and, in summer, daisylike, zoned flower heads, to 3in (8cm) across, in various color combinations. **Tricolor Series** is a group of fast-growing, upright, branching annuals. H 1–2ft (30–60cm), S 1ft (30cm). Have feathery, light green leaves and, in summer, daisylike, single or double flower heads, to 3in (8cm) across, in many color combinations. Tall cultivars, H 2ft (60cm), S 1ft (30cm), and dwarf, H and S 1ft (30cm), are available. Z5–9

ISMENE

AMARYLLIDACEAE

Genus of bulbs grown for their large, white, scented flowers. Similar to *Hymenocallis* and *Pancratium*. Requires a sheltered position in sun or partial shade, in rich, well drained soil. Plant out in early summer, lifting before the first frosts in cold areas, or grow under glass with a winter min. 50–60°F (10–15°C), reduce watering in winter, repot in spring. Propagate by offsets when repotting or by seed sown when ripe.
I. calathina. See *I. narcissiflora*.
I.* x *deflexa, syn. *Hymenocallis festalis*. Spring- or summer-flowering bulb. H to 32in (80cm), S 12–18in (30–45cm). Produces a basal cluster of strap-shaped, semierect leaves. Bears a head of 2–5 scented, white flowers, each 8in (20cm) across with a deep, central cup and 6 narrow, reflexed petals. Z8–10 (min. 50°F/10°C)
I.* x *macrostephana. See *Hymenocallis* x *macrostephana*.
I. narcissiflora, syn. *Hymenocallis calathina, H. narcissiflora, I. calanthina* (Peruvian daffodil), illus. p.408.
***I.* x *spofforthiae* 'Sulphur Queen'**, syn. *Hymenocallis* x *spofforthiae* 'Sulphur Queen', illus p.412.

ISOLEPIS

CYPERACEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
I. setacea, syn. *Scirpus setaceus* (Bristle club-rush). Tuft-forming, annual or short-lived, perennial rush. H 4–6in (10–15cm), S 3in (8cm). Has very slender, lax, basal leaves. Very slender, unbranched stems each bear 1–3 minute, egg-shaped, green spikelets in summer. Z12–15

Isoplexis canariensis. See *Digitalis canariensis*.

ISOPYRUM

RANUNCULACEAE

Genus of spring-flowering perennials, grown for their small, anenome-like, usually white, flowers and delicate foliage. Suitable for peat beds, woodland gardens and rock gardens. Requires shade and humus-rich, moist soil. Propagate by seed when fresh or by division in fall. Self-seeds readily.
I. thalictroides. Dainty, clump-forming perennial. H and S 10in (25cm). Central stalk bears fernlike, deeply divided, 3-parted leaves, each leaflet being cut into 3. Produces small, nodding, cup-shaped, white flowers in spring. Z5–8

ISOTOMA

CAMPANULACEAE

Genus of perennials, often grown as annuals, for their freely borne, star-shaped, long-tubed flowers. Frequently used in containers and as summer bedding. Propagate by seed, sown at 61–64°F (16–18°C) in spring, or by softwood cuttings or division in summer. ⓘ Contact with the sap may irritate skin.
***I.* Avant-Garde Series** illus. p.313
***I.* 'Gemini'.** Vigorous, mound-forming perennial, grown as an annual. H and S 1ft (30cm). Has finely divided, light green leaves. Produces abundant, slightly scented, star-shaped, pink or blue flowers throughout summer. Z9–11

Isotrema griffithii. See *Aristolochia griffithii*.

ITEA

ITEACEAE

Genus of deciduous or evergreen trees and shrubs, grown for their hollylike, foliage, their attractive fall color and their small, white, cream or green-white flowers. Where marginally hardy, protect by growing against a south- or west-facing wall. Needs sun or semishade and fertile, well-drained but not too dry soil. Propagate by softwood cuttings in summer.
I. ilicifolia illus. p.211.

IXIA

IRIDACEAE

Genus of spring- and summer-flowering corms with wiry stems and spikes of flattish flowers. Grow in an open, sunny situation and in well-drained soil. Plant in fall for spring and early summer flowers; plant in spring for later summer display. Dry off after flowering. Propagate in fall by seed or by offsets at replanting time.
***I.* 'Mabel'.** Spring- to early summer-flowering corm. H 16in (40cm), S 1–2in (2.5–5cm). Has linear, basal, mid-green leaves and spikes of deep pink flowers. Z10–11
I. maculata. Spring- to early summer-flowering corm. H 16in (40cm), S 1–2in (2.5–5cm). Leaves are linear, erect and mostly basal. Wiry stem bears a spike of flattish, orange or yellow flowers, 1–2in (2.5–5cm) across, with brown or black centers. Z10–11
I. monadelpha. Spring- to early summer-flowering corm. H 1ft (30cm), S 1–2in (2.5–5cm). Linear, erect leaves are mostly basal. Stem produces a dense spike of 5–10 flattish, white, pink, purple or blue flowers, 1¼–1½in (3–4cm) across, often with differently colored eyes. Z10–11
I. viridiflora illus. p.406.

IXIOLIRION

IXIOLIRIACEAE

Genus of bulbs, grown for their funnel-shaped flowers mainly in spring. Needs a sheltered, sunny site and well-drained soil that becomes hot and dry in summer to ripen the bulb. Propagate, by seed or offsets, in fall.
I. montanum. See *I. tataricum*.
I. tataricum, syn. *I. montanum*, illus. p.403.

IXORA

RUBIACEAE

Genus of evergreen, summer-flowering shrubs and trees, grown primarily for their flowers, some also for their foliage. Prefers full sun and humus-rich, well-drained soil. Water containerized specimens freely when in full growth, moderately at other times. Propagate by seed in spring or by semiripe cuttings in summer.
I. coccinea illus. p.456.

JK

JACARANDA

BIGNONIACEAE

Genus of deciduous or evergreen trees, grown for their flowers, borne in spring and summer, and for their foliage. Grow in fertile, well-drained soil and in full light. Water containerized specimens freely when in full growth, sparingly at other times. Container plants grown for their foliage only may be cut back hard in late winter. Propagate by seed in spring or by semiripe cuttings in summer.
J. acutifolia of gardens. See *J mimosifolia*.
J. mimosifolia, syn. *J. acutifolia* of gardens, *J. ovalifolia*, illus. p.451.
***J. ovalifolia*.** See *J. mimosifolia*.

JACOBAEA

ASTERACEAE/COMPOSITAE

Genus of herbaceous biennials and perennials, sometimes grown as annuals. Usually produces a rosette of often deeply dissected, green or white woolly leaves, followed by an upright stem bearing loose clusters of daisy-type flower heads. Propagate by seed in spring. ⓘ Parts of many species are toxic to humans and animals if ingested.
J. maritima, syn. *Senecio cineraria, S. maritimus.* Moderately fast-growing, evergreen, bushy subshrub, often grown as an annual. H and S 1ft (30cm). Has long, ovate, very deeply lobed, hairy, silver-gray leaves. Rounded, yellow flower heads are produced in summer, but are best removed. Z8–11. **'Cirrus'** has elliptic, finely toothed or lobed, silvery-green to white leaves. **'Silver Dust'** illus. p.315.

***Jacobinia carnea*.** See *Justicia carnea*.
***Jacobinia coccinea*.** See *Pachystachys coccinea*.
***Jacobinia pohliana*.** See *Justicia carnea*.
***Jacobinia spicigera*.** See *Justicia spicigera*.

JACQUEMONTIA

CONVOLVULACEAE

Genus of evergreen perennials and shrubs, many of them twining climbers, grown for their attractive flowers. Any well-drained soil is suitable with full light. Water freely except in cold weather. Provide support and thin out by cutting old stems to ground level in spring. Propagate by seed in spring or by semiripe cuttings in summer. Red spider mite and whitefly may cause problems.
J. pentantha, syn. *J. violacea.* Fast-growing, evergreen, twining climber. H 6–10ft (2–3m). Has heart-shaped to ovate, mid- to bright green leaves. Produces long-stalked clusters of funnel-shaped, rich violet-blue or pure blue flowers, 1in (25cm) across, in summer–fall. Z12–15 (min. 55°F/13°C)
***J. violacea*.** See *J. pentantha*.

JAMESBRITTENIA

SCROPHULARIACEAE

Genus of annuals, perennials and evergreen shrubs. Needs a position in sun and in moist but well-drained soil. Propagate by seed or division in spring or by softwood cuttings in spring or summer.
J. grandiflora, syn. *Sutera grandiflora.* Much-branched, subshrubby perennial, used for summer bedding. H 3ft (1m), S 12–18in (30–45cm). Has ovate to oblong, round-toothed leaves. Tubular, 5-lobed, frilled, deep purple flowers are borne from midsummer to fall. Z12–15 (min. 41°F/5°C)

JAMESIA

HYDRANGEACEAE

Genus of one species of deciduous shrub, grown for its flowers. Needs full sun and fertile, well-drained soil. Propagate by softwood cuttings in summer.
***J. americana*.** Deciduous, bushy shrub. H 5ft (1.5m), S 8ft (2.5m). Rounded, gray-green leaves are gray-white beneath. Clusters of small, slightly fragrant, star-shaped, white flowers are produced during late spring. Z5–9

JANCAEA

SYN. JANKAEA

GESNERIACEAE

Genus of one species of evergreen, rosetted perennial, grown for its flowers and silver-green leaves. Good for an alpine house. Difficult to grow, as needs shade from mid-day sun in high summer, a humus-rich, gritty, moist, alkaline soil and a gritty collar. Dislikes winter wet. Propagate by seed in fall or by leaf cuttings in spring.
J. heldreichii illus. p.355.

***Jankaea*.** See *Jancaea*.

JASIONE

CAMPANULACEAE

Genus of summer-flowering annuals, biennials and perennials, grown for their attractive flower heads. Needs sun and sandy soil. Remove old stems in fall. Propagate by seed in fall or by division in spring.
J. laevis, syn. *J. perennis* (Sheep's bit). Tufted perennial. H 2–12in (5–30cm), S 4–8in (10–20cm). Has narrowly oblong, very hairy or glabrous, gray-green leaves and, in summer, spiky, spherical, blue flower heads borne on erect stems. Good for a rock garden. Z6–8
***J. perennis*.** See *J. laevis*.

JASMINUM

Jasmine

OLEACEAE

Genus of deciduous or evergreen shrubs and woody-stemmed, scrambling or twining climbers, grown for their star-shaped, often fragrant flowers and their foliage. Needs full sun and fertile, well-drained soil. *J. nudiflorum* needs support and benefits from having old shoots thinned out after flowering, when others may be pruned. Propagate by semiripe cuttings in summer.
J. angulare, syn. *J. capense.* Evergreen, woody-stemmed, scrambling climber. H 6ft (2m) or more. Dark green leaves have 3 ovate leaflets. Small clusters of fragrant, tubular, 5-lobed, white flowers are borne in late summer. Z10–11
***J. azoricum*.** Twining, evergreen climber, sometimes semiscrambler. H 10–15ft (3–5m). Opposite, pinnate, deep green leaves have 3–5 ovate to heart-shaped, wavy-margined leaflets, to 3in (8cm) long. Small, terminal cymes of 3 purple-tinted buds, opening to fragrant white flowers, are borne mainly in late summer. Z9–11
J. beesianum illus. p.193.
***J. capense*.** See *J. angulare*.
J. grandiflorum of gardens. See *J. officinale* f. *affine*.
J. humile (Yellow jasmine) illus. p.139. **'Revolutum'** illus. p.206.
f. *wallichianum* is a scandent shrub, H 10ft (3m). Alternate, pinnate, bright green leaves have 7–13, hairy leaflets. In summer, bears clusters of 3–5, semipendent, yellow, star-shaped flowers. Z7–11
J. mesnyi, syn. *J. primulinum* (Primrose jasmine), illus. p.195.
J. nudiflorum (Winter jasmine) illus. p.144.
J. officinale (Common jasmine, Jessamine). Semievergreen or deciduous, woody-stemmed, twining climber. H to 40ft (12m). Leaves comprise 7 or 9 leaflets. Bears clusters of fragrant, 4- or 5-lobed, white flowers in summer–fall. Z8–11.
f. *affine* (syn. *J. grandiflorum* of gardens) illus. p.196. **'Argenteovariegatum'** has gray-green leaves with creamy white margins. **Fiona Sunrise ('Frojas')** has strongly flushed, golden yellow leaves when grown in good light. **'Inverleith'** is a striking form with pure white flowers, strongly flushed purplish-red on the tube and reverse of the petals, and in bud.
***J. parkeri*.** Evergreen, domed shrub. H 6in (15cm), S 15in (38cm) or more. Has a tangled mass of fine stems and twigs bearing minute, ovate leaves. Abundant tiny, tubular, 5-lobed, yellow flowers are produced in leaf axils in early summer. Z7–11
J. polyanthum illus. p.208.
***J. primulinum*.** See *J. mesnyi*.
J.* x *stephanense illus. p.201.

JEFFERSONIA

BERBERIDACEAE

Genus of spring-flowering perennials. Needs shade or partial shade and humus-rich, moist soil. Extensive root systems resent disturbance. Top-dress crown in late fall. Propagate by seed as soon as ripe.
J. diphylla illus. p.333.
J. dubia, syn. *Plagiorhegma dubia*, illus. p.355.

JOVIBARBA

CRASSULACEAE

Genus of evergreen perennials that spread by short stolons and are grown for their symmetrical rosettes of ovate to strap-shaped, pointed, fleshy leaves. Forms ground-hugging mats, suitable for rock gardens, screes, walls, banks and alpine houses. Needs sun and gritty soil. Takes several years to reach flowering size. Rosettes die after plants have flowered, but leave numerous offsets. Propagate by offsets in summer.
J. hirta, syn. *Sempervivum globiferum* subsp. *hirtum*, illus. p.374.
J. sobolifera, syn. *Sempervivum globiferum* subsp. *globiferum.* Vigorous, evergreen, mat-forming perennial. H 4in (10cm), S 8in (20cm). Rounded, grayish-green or olive-green rosettes are often red-tinged. Flower stems bear terminal clusters of small, cup-shaped, 6-petaled (rarely 5 or 7), pale yellow flowers in summer. Z5–8

JUANULLOA

SOLANACEAE

Genus of evergreen, summer-flowering shrubs, grown for their flowers. Low temperatures cause leaf drop. Prefers full light and fertile, freely draining soil. Water potted specimens moderately, less when not in full growth. To encourage branching, tip prune young plants. Propagate by semiripe cuttings in summer. Whitefly, red spider mite and mealy bug may be troublesome.
***J. aurantiaca*.** See *J. mexicana*.
J. mexicana, syn. *J. aurantiaca*. Evergreen, upright, sparingly branched shrub. H 6ft (2m) or more, S 2–3ft (60–90cm). Leaves are felted beneath. Bears orange flowers, each with a ribbed calyx, in short, nodding clusters in summer. Z13–15 (min. 55°F/13°C)

JUBAEA

ARECACEAE/PALMAE

Genus of one species of evergreen palm, grown for its overall appearance. Needs full light and fertile, well-drained soil. Water containerized specimens moderately, less frequently in winter. Propagate by seed in spring at not less than 77°F (25°C). Red spider mite may be a nuisance.
J. chilensis, syn. *J. spectabilis* (Chilean wine palm, Coquito), illus. p.80.
***J. spectabilis*.** See *J. chilensis*.

JUGLANS

Walnut

JUGLANDACEAE

Genus of deciduous trees, sometimes shrubs, with aromatic leaves, grown for their foliage, stately habit and, in some species, edible nuts (walnuts). Produces greenish-yellow catkins in spring and early summer. Young plants are vulnerable to frost damage. Requires full sun and deep, fertile, well-drained soil. Propagate by seed, when ripe, in fall.
J. ailantifolia, syn. *J. sieboldiana* (Japanese walnut). Deciduous, spreading tree with sturdy shoots. H and S 50ft (15m). Very large leaves consist of 11–17 oblong, glossy, bright green leaflets. Bears edible walnuts in fall. Z5–8
***J. cathayensis*.** See *J. mandschurica*.
J. cinerea (Butternut). Fast-growing, deciduous, spreading tree. H 80ft (25m), S 70ft (20m). Leaves are large and very

aromatic, with 7–19 ovate to oblong, pointed, bright green leaflets. Bears dense clusters of large, rounded nuts in fall. Z3–9

J. mandschurica, syn. *J. cathayensis* (Chinese walnut). Deciduous, spreading, suckering tree. H and S 70ft (20m). Has very large leaves, consisting of 11–17 ovate to oblong, dark green leaflets. Bears edible walnuts in fall. Z5–8

J. nigra (Black walnut) illus. p.63.

J. regia (English walnut) illus. p.62. **'Franquette'** is a vigorous, deciduous, round-headed tree. H 70ft (20m), S 50ft (15m). Has been selected for its excellent fruit quality; nuts are large, thin-shelled and late-maturing. Self sterile. **'Laciniata'** (Cut-leaved walnut), S 33ft (10m), is a slow-growing, spreading cultivar with the leaflets deeply cut into narrow lobes. **'Lara'**, H 40ft (12m), S 28ft (9m), has a more compact habit than most. Its large, thin-shelled fruits have a sweet creamy flavor and are ripe early to mid-season. Self fertile and a heavy cropper. Z3–7

J. sieboldiana. See *J. ailanthifolia.*

JUNCUS

JUNCACEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.

J. effusus* f. *spiralis, syn. *J. effusus* 'Spiralis', *Scirpus lacustris* 'Spiralis' (Corkscrew rush), illus. p.286.

JUNIPERUS

Juniper

CUPRESSACEAE

See also CONIFERS.

J. chinensis (Chinese juniper). Conical conifer, making a tree. H 50ft (15m), S 6–10ft (2–3m), or a spreading shrub H 3–15ft (1–5m), S 10–15ft (3–5m). Has peeling bark. Both scale- and needlelike, aromatic, dark green leaves, paired or in 3s, are borne on same shoot. Globose, fleshy, berrylike fruits are glaucous white. Many cultivars commonly listed under *J. chinensis* are forms of *J.* x *pfitzeriana.* See also feature panel p.105. Z3–9. **'Aurea'**, H 30–50ft (10–15m), S 10–12ft (3–4m), is a slow-growing, ovate or conical form with gold foliage and abundant yellow, male cones. **'Blaauw'** (syn. *J.* x *media* 'Blaauw'), H and S 6ft (2m), is a spreading shrub with blue-green foliage. **'Kaizuka'**, H 15ft (5m), S 10–15ft (3–5m), forms a sprawling, irregular bush and has a profusion of cones. **'Keteleeri'** illus. p.100. **'Obelisk'** illus. p.103. **'Plumosa Aurea'** (syn. *J.* x *media* 'Plumosa Aurea') is more erect, with green-gold foliage, turning bronze in winter. **'Pyramidalis'**, H 30ft (10m), S 3–6ft (1–2m), is a columnar, dense form with ascending branches bearing needlelike, blue-green leaves. **'Robust Green'** (syn. *J. virginiana* 'Robusta Green') illus. p.103. **'Stricta'**, H to 15ft (5m), S to 3ft (1m), is conical, with soft, blue-green, young foliage.

J. communis (Common juniper). Conifer, ranging from a spreading shrub to a narrow, upright tree. H 1–25ft (0.3–8m), S 3–12ft (1–4m). Has needlelike, aromatic, glossy, mid- or yellow-green leaves in 3s and bears globular to ovoid, fleshy, greenish berries that become glaucous blue, then ripen to black in their third year. Z2–6. **'Compressa'**, H 30in (75cm), S 6in (15cm), is a dwarf, erect form. **'Hibernica'**, H 10–15ft (3–5m), S 1ft (30cm), is columnar. **'Hornibrookii'**, H 20in (50cm), S 6ft (2m), and **'Prostrata'**, H 8–12in (20–30cm), S 3–6ft (1–2m), are carpeting plants.

J. conferta. See *J. rigida* subsp. *conferta*.

***J. davurica* 'Expansa Variegata'.** See *J. chinensis* 'Expansa Variegata'.

J. drupacea (Syrian juniper). Columnar conifer. H 30–50ft (10–15m), S 3–6ft (1–2m). Has needlelike, aromatic, light green leaves, in 3s, and ovoid or almost globose, fleshy, brown berries. Z7–10

***J.* 'Grey Owl'**, syn. *J. virginiana* 'Grey Owl'. Large, spreading shrub. H 6–10ft (2–3m), S 10–12ft (3–4m). Has horizontal branches and arching, ovate-diamond-shaped, scalelike, soft, silver-gray leaves. Bears ovoid, glaucous, brownish-violet fruit, which ripens in the first fall. Z2–9

J. horizontalis (Creeping juniper). Prostrate, wide-spreading, shrubby conifer, eventually forming mats up to 20in (50cm) thick. Has scale- or needlelike, aromatic, blue-green or blue-gray leaves and pale blue-gray berries. Z3–9. Leaves of **'Andorra Compact'** (syn. *J.h.* 'Plumosa Compacta') turn bronze-purple in winter. **'Douglasii'** has glaucous blue foliage that turns plum-purple in winter. **'Plumosa'** is less dense than 'Andorra Compact' and has gray-green leaves, becoming purple during winter. **'Plumosa Compacta'** see *J.h.* 'Andorra Compact'. **'Prince of Wales'** has bright green foliage, tinged blue when young and turning purple-brown in winter. **'Turquoise Spreader'** has turquoise-green foliage. **'Wiltonii'** has bluish-gray leaves that retain their color over winter.

J.* x *media. See *J.* x *pfitzeriana.* **'Blaauw'** see *J. chinensis* 'Blaauw'. **'Blue and Gold'** see *J.* x *pfitzeriana* 'Blue and Gold'. **'Hetzii'** see *J. virginiana* 'Hetzii'. **'Pfitzeriana'** see *J.* x *pfitzeriana* 'William Pfitzer'. **'Pfitzeriana Aurea'** see *J.* x *pfitzeriana* 'Aurea'. **'Pfitzeriana Glauca'** see *J.* x *pfitzeriana* 'Glauca'. **'Plumosa'** see *J.* x *pfitzeriana* 'Plumosa'. **'Plumosa Aurea'** see *J. chinensis* 'Plumosa Aurea'.

J.* x *pfitzeriana, syn. *J.* x *media.* Group of spreading to conical conifers with peeling bark. H 50ft (15m), S 6–10ft (2–3m). Mainly scalelike, dark green leaves exude a fetid smell when crushed. Fruits are globose to rounded, white or blue-black. Cultivars are suitable as groundcover or as specimen plants in a small garden. Some forms are commonly listed under *J. chinensis.* Z4–9. **'Aurea'** (syn. *J.* x *media* 'Pfitzeriana Aurea') has golden foliage. **'Blue and Gold'** (syn. *J.* x *media* 'Blue and Gold') H to 3ft (1m), S 3ft (1m), is a spreading form with leaves variegated sky-blue and gold. **'Glauca'** (syn. *J.* x *media* 'Pfitzeriana Glauca') produces gray-blue leaves. **'Old Gold'** (illus. p.105), H 3ft (1m), S 8ft (2.5m), has a compact, spreading, flat-topped habit and bronze-yellow leaves. **'Pfitzeriana Compacta'**, H and S 5ft (1.5m), has a dense, compact habit and a tendency to produce more juvenile leaves. **'Plumosa'** (syn. *J.* x *media* 'Plumosa'), H 3ft (1m), S 6–10ft (2–3m), is a spreading shrub with drooping sprays of mid-green foliage. **'William Pfitzer'** (syn. *J.* x *media* 'Pfitzeriana'), H 10ft (3m), S 10–15ft (3–5m), is a spreading, flat-topped shrub with grayish-green leaves.

J. procumbens (Bonin Isles juniper). Spreading, prostrate, shrubby conifer. H 2½ft (75cm), S 6ft (2m). Has red-brown bark. Thick branches bear needlelike, aromatic, light green or yellow-green leaves and globose, fleshy, brown or black berries. Z3–9. **'Nana'**, H 6–8in (15–20cm), S 2½ft (75cm), is less vigorous and is mat-forming.

J. recurva (Drooping juniper, Himalayan weeping juniper) illus. p.103. **var. *coxii*** (Coffin juniper) illus. p.100. **'Densa'** (syn. *J. recurva* 'Nana') is a spreading conifer. H 1ft (30cm), S 3ft (1m). Shaggy bark flakes in thin sheets. Sprays of long, needlelike, aromatic, dark green leaves are erect at tips. Ovoid, fleshy berries are black. Z7–11 **'Nana'** see *J.r.* 'Densa'.

J. rigida (Temple juniper). Sprawling, shrubby conifer. H and S 25ft (8m). Gray or brown bark peels in strips. Very sharp, needlelike, aromatic, bright green leaves, in 3s, are borne in nodding sprays. Globose, fleshy fruits are purplish-black. Z6–9. **subsp. *conferta*** (syn. *J. conferta;* Shore juniper) is a prostrate, shrubby conifer. H 6in (15cm), S 3–6ft (1–2m). Spreading branches bear dense, needlelike, aromatic, glossy, bright green leaves, glaucous beneath. Produces glaucous black berries. Tolerates salty, coastal air.

J. sabina (Savin). Spreading, shrubby conifer. H to 12ft (4m), S 10–15ft (3–5m). Has flaking, red-brown bark. Slender shoots bear mainly scalelike, aromatic, dark green leaves that give off a fetid smell when crushed. Produces rounded, blue-black berries. Z4–7. **'Blaue Donau'** (syn. *J.s.* 'Blue Danube'), H 6ft (2m), S 6–12ft (2–4m), is a spreading form with branch tips curved upward and gray-blue foliage. **'Blue Danube'** see *J.s.* 'Blaue Donau'. **'Cupressifolia'**, H 6ft (2m), S 12ft (4m), is a free-fruiting, female form with horizontal or ascending branches and blue-green leaves. **'Mas'** has ascending branches. Leaves are blue above, green below, purplish in winter. **'Tamariscifolia'**, H 3ft (1m), S 6ft (2m), produces tiered layers of mainly needlelike, bright green or blue-green leaves.

J. scopulorum (Rocky Mountain juniper). Slow-growing, round-crowned conifer. H 30ft (10m), S 12ft (4m). Reddish-brown bark is furrowed into strips or squares and peels on branches. Scalelike, aromatic leaves are gray-green to dark green. Bears globose, fleshy, blue berries. Z3–7. **'Blue Arrow'**, H to 12ft (4m), S 20in (50cm), is similar to 'Skyrocket' but with deeper blue leaves. **'Skyrocket'** (syn. *J. virginiana* 'Skyrocket'; illus. p.105), H 26ft (8m), S 2½ft (75cm), is very narrow in habit with glaucous blue foliage. **'Springbank'** is narrowly conical with drooping branch tips and intense silvery-blue foliage. **'Tabletop'**, H 6ft (2m), S 15ft (5m), has a flat-topped habit and silvery-blue leaves.

J. squamata (Singleseed juniper). Prostrate to sprawling, shrubby conifer. H 1–12ft (0.3–4m), S 3–15ft (1–5m). Bark is red-brown and flaking. Needlelike, aromatic, fresh green or bluish-green leaves spread at tips of shoots. Produces ovoid, fleshy, black berries. Z4–9. **'Blue Carpet'** (illus. p.105), H 1ft (30cm), S 6–10ft (2–3m), is vigorous and prostrate, with glaucous blue foliage. **'Blue Star'**, H 20in (50cm), S 2ft (60cm), forms a dense, rounded bush and has blue foliage. **'Holger'** (illus. p.105), H and S 6ft (2m), produces sulfur-yellow young leaves that contrast with steel-blue old foliage. **'Meyeri'**, H and S 15ft (5m), has a sprawling habit and steel-blue foliage.

J. virginiana (Eastern juniper, Eastern red cedar). Slow-growing, conical or broadly columnar conifer. H 50–70ft (15–20m), S 20–25ft (6–8m). Both scale- and needlelike, aromatic, gray-green leaves are borne on same shoot. Ovoid, fleshy berries are brownish-violet and extremely glaucous. Z3–9. **'Burkii'**, H to 20ft (6m), S 3ft (1m), has blue-gray leaves that become purple-tinged over winter. **'Grey Owl'** see *J.* 'Grey Owl'. **'Hetzii'** (syn. *J.* x *media* 'Hetzii'), H 10–12ft (3–4m), S 12ft (4m), produces tiers of gray-green foliage. **'Robusta Green'** see *J. chinensis* 'Robusta Green'. **'Skyrocket'** see *J. scopulorum* 'Skyrocket'.

JUSTICIA

ACANTHACEAE

Genus of evergreen perennials, subshrubs and shrubs, grown mainly for their flowers. Requires full light or partial shade and fertile, well-drained soil. Water potted specimens freely when in full growth, moderately at other times. Some species need regular pruning. Propagate by softwood or greenwood cuttings in spring or early summer. Whitefly may cause problems.

J. adhatoda, syn. *Adhatoda duvernoia, Duvernoia adhatodoides* (Snake bush). Evergreen, erect shrub. H 6–10ft (2–3m), S 3–6ft (1–2m). Has elliptic, dark green leaves. Fragrant, tubular, white or mauve flowers, with pink, red or purple marks, are borne in summer–fall. Z12–15 (min. 50°F/10°C)

J. brandegeeana, syn. *Beloperone guttata*, *Drejerella guttata* (Shrimp plant), illus. p.455. **'Chartreuse'** is an evergreen, arching shrub. H to 3ft (1m), S 24–36in (60–90cm). Has white flowers surrounded by bright lime-green bracts mainly in summer but also intermittently during the year. Z11–12 (min. 50°F/10°C)

J. carnea, syn. *Jacobinia carnea, J. pohliana* (King's crown), illus. p.455.

J. coccinea. See *Pachystachys coccinea.*

J. floribunda, syn. *J. pauciflora, J. rizzinii, Libonia floribunda.* Evergreen, rounded, freely branching shrub. H and S 1–2ft (30–60cm). Leaves are ovate and mid-green. Bears nodding clusters of tubular, yellow-tipped, scarlet flowers mainly fall–spring; propagate every few years. Z11–12 (min. 50°F/10°C)

J. ghiesbreghtiana of gardens. See *J. spicigera.*

J. pauciflora. See *J. floribunda.*

J. rizzinii. See *J. floribunda.*

J. spicigera, syn. *J. ghiesbreghtiana* of gardens, *Jacobinia spicigera*. Evergreen, well-branched shrub. H to 3–6ft (1–1.8m), S 2½–4ft (75–120cm). Bears spikes of tubular, orange or red flowers in summer and occasionally other seasons. Z14–15 (min. 50°F/10°C)

KADSURA

SCHISANDRACEAE

Genus of evergreen, twining climbers, grown for their foliage and fruits. Male and female flowers are borne on separate plants, so plants of both sexes must be grown to obtain fruits. Grow in semishade and in any soil. Propagate by stem cuttings in late summer.

K. japonica. Evergreen, twining climber. H 10–12ft (3–4m). Has ovate or lance-shaped, mid-green leaves. Solitary small, fragrant, cream flowers are produced in leaf axils in summer, followed by bright red berries. Prefers well-drained soil. Z6–9

KAEMPFERIA

ZINGIBERACEAE

Genus of tufted, rhizomatous perennials, grown for their aromatic leaves and their flowers. Needs a moist atmosphere, partial shade and moist, humus-rich soil. Allow to dry out when plants are dormant. Propagate by division in late spring. See also feature panel p.477.

K. pulchra (illus. p.477). Tufted, rhizomatous perennial. H 6in (15cm), S 12in (30cm). Has horizontal, aromatic, dark green leaves, variegated with paler green above. Short spikes of lilac-pink flowers are borne from the center of tufts in summer. Z11–12 (min. 50°F/10°C)

K. roscoeana. Rhizomatous perennial without an obvious stem. H 2–4in (5–10cm), S 8–10in (20–25cm). Usually has only 2 almost rounded, aromatic leaves, to 4in (10cm) long, dark green with pale green marks above, reddish-green below, that are held horizontally. A short spike of pure white flowers, each with a deeply lobed lip, are produced from the center of the leaf tuft in fall. Z11–12 (min. 50°F/10°C)

K. rotunda. Herbacous, rhizomatous perennial. H 2ft (60cm), S 1ft (30cm). Has 2–4 broadly lance-shaped leaves, 8–10in (20–25cm) long, patterned silver and deep green, with red undersides. White flowers, with pink to purple lips, borne on a separate stem before the leafy stem emerges, open in succession from late spring to summer. A number of cultivars are grown for their patterned foliage. Z11–12 (min. 50°F/10°C)

KALANCHOE

SYN. BRYOPHYLLUM

CRASSULACEAE

Genus of annual, biennial, and perennial succulents, shrubs, climbers, and small trees, with very fleshy, mainly cylindrical, ovate or linear leaves and bell-shaped to tubular flowers. Many species produce new plantlets from indented leaf margins. Needs full sun or partial shade and well-drained soil. Keep moist from spring to fall. Water lightly and only occasionally in winter. Propagate by seed, offsets or stem cuttings in spring or summer.

K. beharensis. Bushy, perennial succulent. H and S to 12ft (4m). Triangular to lance-shaped, olive-green leaves are covered with fine, brown hairs. Plants over 6ft (2m) high bear bell-shaped, yellow flowers in late winter. Z11–12 (min. 50°F/10°C)

K. blossfeldiana (Flaming Katy; illus. p.487). Bushy, perennial succulent. H and S 1ft (30cm). Has ovate to oblong, glossy, dark green leaves with toothed edges and clusters of tubular, scarlet flowers, ¼in (0.5cm) across, in spring. Prefers partial shade. Hybrids are available in a range of colors (salmon pink, illus. p.487). Z11. (min. 54°F/12°C). **'Calandiva'** illus. p.482.

K. daigremontiana (Mexican hat plant) illus. p.492.

K. delagoensis, syn. *K. tubiflora*, illus. p.496.

K. fedtschenkoi. Bushy, perennial succulent. H and S 3ft (1m). Produces ovate, indented, blue-gray leaves with new plantlets in each notch. Bell-shaped, brownish-pink flowers, ¾in (2cm) long, are borne in late winter. Prefers a sunny position. Z11. (min. 54°F/12°C). **'Variegata'** illus. p.482.

K. laetivirens. Evergreen, perennial succulent. H 10in (25cm), S 6in (15cm). Oblong to elliptic, glaucous, mid-green leaves, turning pink in strong light, produce small plantlets from notches along the margins. Bears clusters of tubular, greenish-white to purplish flowers, ⅝in (1.5cm) long, in winter. Z11–12 (min. 50°F/10°C)

K. pumila. Creeping, perennial succulent. H 4in (10cm), S indefinite. Has ovate, powdery gray-white leaves with indented margins. Tubular, pink flowers, ½in (1cm) long, are produced in spring. Suits a hanging basket in a sunny position. Z11 (min. 54°F/12°C)

***K.* 'Tessa'** illus. p.487.

K. tomentosa (Panda plant, Pussy ears) illus. p.490.

K. tubiflora. See *K. delagoensis.*

K. uniflora, syn. *Kitchingia uniflora.* Creeping, perennial succulent. H 2½in (6cm), S indefinite. Produces rounded, mid-green leaves, ¼–1¼in (0.5–3cm) long, and bell-shaped, yellow-flushed, reddish-purple flowers, ½in (1cm) long, in late winter. Prefers partial shade. Z11–15 (min. 50°F/10°C)

***K.* 'Wendy'** illus. p.485.

KALMIA

ERICACEAE

Genus of evergreen, summer-flowering shrubs, grown for their clusters of distinctive, usually cup-shaped flowers. Needs sun or semishade and moist, peaty, acidic soil. Propagate species by softwood cuttings in summer or by seed in spring, selected forms by softwood cuttings in summer. ⓘ All parts may cause severe discomfort if ingested.

K. angustifolia (Sheep laurel) illus. p.154. **'Rubra'** see *K.a.* f. *rubra*.

f. *rubra* (syn. *K. angustifolia* 'Rubra') illus. p.156. ***K. buxifolia***, syn. *Leiophyllum buxifolium*. Evergreen, dome-shaped shrub. H 10in (25cm), S 18in (45cm). Stems are covered with tiny, ovate, leathery, dark green leaves. In late spring, terminal clusters of deep pink buds develop into small, star-shaped, white flowers, with prominent stamens. Z7–8

K. latifolia (Calico bush) illus. p.136. **'Freckles'** is a dense, bushy, evergreen shrub. H and S 10ft (3m). Has alternate, ovate to elliptic-lance-shaped, glossy, dark green leaves. Bears large corymbs of cup-shaped, pale pink flowers with small, red-purple spots just inside the rim, from late spring to midsummer. **'Olympic Fire'** has wavy-margined leaves and large pink flowers, 1in (25cm) across, opening from red buds. **'Pink Charm'** has rich pink flowers with a deep maroon band inside, opening from deep reddish-pink buds. Z4–9

K. procumbens, syn. *Loiseleuria procumbens* (Alpine azalea, Trailing azalea), illus. p.364.

KALMIOPSIS

ERICACEAE

Genus of one species of evergreen, spring-flowering shrub, grown for its flowers. Needs semishade and moist but well-drained, acidic soil. Propagate by softwood or semiripe cuttings in summer. Suits a cool site in a peat garden.

***K. leachiana* 'La Piniec'**, syn. *K.l.* 'M. le Piniec'. Evergreen, bushy shrub. H and S 1ft (30cm). Terminal clusters of small, widely bell-shaped, purplish-pink flowers are borne from early to late spring. Has small, ovate, glossy, dark green leaves. Z7–9. **'M. le Piniec'** see *K.l.* 'La Piniec'.

KALOPANAX

ARALIACEAE

Genus of one species of fall-flowering, deciduous tree, grown for its foliage and fruits. Unripened wood on young plants is susceptible to frost damage. Does best in sun or semishade in any fertile, moist but well-drained soil. Propagate by softwood cuttings in summer.

K. pictus. See *K. septemlobus.*

K. ricinifolius. See *K. septemlobus.*

K. septemlobus, syn. *Acanthopanax ricinifolius, K. pictus, K. ricinifolius*, illus. p.74.

KELSEYA

ROSACEAE

Genus of one species of extremely small, evergreen subshrub, grown mainly for its neat rosettes of silvery foliage. Does best in an alpine house, as foliage deeply resents both summer and winter wet. Requires full sun and moist, alkaline soil. Propagate by soft-tip cuttings in late spring or by seed in fall. Susceptible to mold, so remove any dead rosettes at once.

K. uniflora. Slow-growing, evergreen, rosetted subshrub. H ½in (1cm), S to 8in (20cm). Forms a hard mat of closely packed, small rosettes of tiny, ovate, dark green leaves. In early spring, produces stemless, star-shaped, occasionally pink-flushed, white flowers. Z5–7

KENNEDIA

SYN. KENNEDYA

PAPILIONACEAE/LEGUMINOSAE

Genus of evergreen, woody-stemmed, trailing and twining climbers, grown for their pealike flowers. Provide full light and moderately fertile, sandy soil. Water regularly in full growth, sparingly in cold weather. Needs support. Thin out congested growth after flowering or in spring. Propagate by seed in spring or semiripe cuttings in summer.

K. coccinea (Common coral vine). Woody-stemmed, twining climber or trailer. H 6ft (2m). Has deep green, slightly leathery leaves, divided into 3 leaflets. From spring to early summer, produces umbel-like racemes of 4–20 coral-red flowers. The standard petals are marked with yellow and purple-margined at the base, and open from buds covered with soft red hairs. Tolerates coastal sites and alkaline soil. Z10–12 (min. 41–45°F/5–7°C)

K. rubicunda (Dusky coral pea) illus. p.462.

Kennedya. See *Kennedia.*

Kentia fosteriana. See *Howea fosteriana*.

KERRIA

ROSACEAE

Genus of one species of deciduous shrub, grown for its showy flowers. Needs sun or semishade and fertile, well-drained soil. Thin out old shoots after flowering. Propagate by softwood cuttings in summer or by division in fall.

***K. japonica* 'Golden Guinea'.** Deciduous, suckering shrub with arching green shoots. H 6ft (2m), S 8ft (2.5m). Has ovate, pointed, sharply toothed, bright green leaves. In mid- and late spring, produces very large, single, golden yellow flowers, 2–2½in (5–6cm) across. The bright green stems are conspicuous in winter. Z5–9. **'Pleniflora'** illus. p.127. **'Simplex'** has single, buttercup-like, yellow flowers.

KIGELIA

BIGNONIACEAE

Genus of one species of evergreen tree, grown for its flowers, curious, sausagelike fruits and for shade. Requires full light and humus-rich, well-drained soil. Water potted specimens moderately, very little when temperatures low. Propagate by seed in spring at not less than 73°F (23°C).

K. africana, syn. *K. pinnata* (Sausage tree). Evergreen, spreading, fairly bushy tree. H and S 25ft (8m) or more. Leaves have 7–11 oblong to ovate leaflets. Scented, bell-shaped, purplish-red flowers open at night from fall to spring. Cylindrical, hard-shelled, brown fruits, 1–1½ft (30–45cm) long, are inedible. Z10–11 (min. 61°F/16°C)

K. pinnata. See *K. africana.*

KIRENGESHOMA

HYDRANGEACEAE

Genus of late summer- and fall-flowering perennials, grown for their nodding, pale or bright yellow flowers and elegant, sycamore-like leaves. Ideal for a shady border or woodland garden. Grow in light shade and deep, moist, non-alkaline soil. Propagate by seed or by division in spring.

K. palmata illus. p.251. **Koreana Group** are deciduous, clump-forming perennials with short rhizomes. H 2–4ft (60–120cm), S 2½ft (75cm). Erect, reddish-purple stems bear rounded, pale green leaves and outward-facing tubular, pale yellow flowers, in late summer and early fall. Z5–8

KITAIBELA
syn. KITAIBELIA

MALVACEAE

Genus of one species of summer-flowering perennial. Needs full sun and fertile, moist but well-drained soil. Propagate by seed in fall or spring.

K. vitifolia. Bushy, upright perennial. H to 5ft (1.5m), S 2ft (60cm). In summer bears small clusters of open cup-shaped, white or rose-pink flowers. Has palmately lobed, coarsely toothed leaves. Z6–8

Kitaibelia. See *Kitaibela*.

Kitchingia uniflora. See *Kalanchoe uniflora*.

Kleinia articulata. See *Curio articulata*.

KNAUTIA

CAPRIFOLIACEAE

Genus of summer-flowering annuals and perennials. Needs sun and well-drained soil. Requires staking. Propagate by basal cuttings in spring or seed in spring or fall.

K. arvensis, syn. *Scabiosa arvensis* (Scabious). Erect perennial. H 4ft (1.2m), S 1½ft (45cm). Bears heads of pincushion-like, bluish-lilac flowers in summer. Stems are clothed in narrowly ovate to lyre-shaped, deeply divided leaves. Z5–9

K. macedonica, syn. *Scabiosa rumelica*, illus. p.235.

KNIGHTIA

PROTEACEAE

Genus of evergreen, summer-flowering trees or shrubs, grown for their flowers, foliage and overall appearance. Grow in fertile, well-drained soil, in sun or partial shade. Water containerized specimens moderately in growth, less in winter. Propagate by seed in spring.

K. excelsa (New Zealand honeysuckle, Rewa rewa). Evergreen, upright tree. H 70ft (20m) or more, S 6–12ft (2–4m). Has oblong to lance-shaped, coarsely serrated, leathery leaves, glossy and deep green. Dense racemes of slender, tubular, deep red flowers are produced in summer. Z10–11 (min. 37–45°F/3–7°C)

KNIPHOFIA

Red-hot poker, Torch lily

ASPHODELACEAE/LILIACEAE

Genus of perennials, some of which are evergreen. Needs full sun and well-drained soil that is constantly moist in summer. Propagate species by seed or division in spring, cultivars by division only in spring. See also feature panel p.254.

K. 'Alcazar'. Semievergreen, clump-forming perennial. H 3ft (1m), S 1½ft (45cm). Has long, lance-shaped, mid-green, basal leaves. In summer, upright, dark green stems bear racemes of reddish-orange buds opening to tubular, golden-yellow flowers. Z7–11

K. 'Bee's Lemon'. Upright perennial. H 3ft (1m), S 1½ft (45cm). Grasslike, deep green leaves have serrated edges. Bears dense, terminal racemes of tubular, green-tinged, citron-yellow flowers on sturdy stems in late summer and fall. Z6–9

K. 'Bees' Sunset' (illus. p.254). Semievergreen, clump-forming perennial. H 4ft (1.2m), S 1½ft (45cm). Has long, grasslike, mid-green, basal leaves. In summer, upright, purplish-green stems bear slender racemes of tubular, warm orange-flushed, yellow flowers. Z6–9

K. 'Brimstone'. Semievergreen, clump-forming perennial. H 3ft (1m), S 1½ft (45cm). Has long, narrowly lance-shaped, mid-green, basal leaves. In summer, upright stems bear slender racemes of tubular, soft greenish-yellow flowers. Z6–11

K. caulescens (illus. p.254). Stately, evergreen, upright perennial. H 4ft (1.2m), S 2ft (60cm). Has basal tufts of narrow, blue-green leaves and smooth, sturdy stems bearing terminal spikes of reddish-salmon flowers in fall. Z6–9

K. 'C.M. Prichard' of gardens. See *K. rooperi*.

K. 'Cobra'. Semievergreen, clump-forming perennial. H 3ft (1m) or more, S 1½ft (45cm). Has long, lance-shaped, mid-green, basal leaves. In summer, upright stems bear sturdy, broad, dense racemes of tubular, brown-tinged, orange flowers that age to yellowish-white. Z6–11

K. 'Green Jade' (illus. p.254). Semievergreen, clump-forming perennial. H 4ft (1.2m), S 22in (55cm). Has long, lance-shaped, mid-green, basal leaves. In summer, upright stems produce elegant, slender racemes of tubular, pale green flowers, fading to warm ivory-white. Z6–9

K. 'Ice Queen' (illus. p.254). Robust, clump-forming, herbaceous perennial. H 5ft (1.5m), S 2½ft (75cm). Bears green-budded flowers opening to pale primrose yellow, fading to ivory, in midsummer. Z6–11

K. linearifolia. Semievergreen, clump-forming perennial. H 5ft (1.5m), S 32in (80cm). Has very long, rather lax, grasslike, mid-green leaves. In summer, upright stems bear dense racemes of orange-red buds opening to tubular, bright yellow flowers. Z7–11

K. 'Little Maid'. Semievergreen, clump-forming perennial. H 2ft (60cm), S 1ft (30cm). Has long, grasslike, mid-green, basal leaves. In summer, upright stems bear racemes of tubular, greenish-yellow flowers that fade to creamy-white. Z6–9

K. 'Nancy's Red'. Herbaceous perennial with grasslike leaves. H 28in (70cm), S 18in (45cm). Produces heads of red flowers in midsummer. Z6–11

K. 'Nobilis', syn. *K. uvaria* 'Nobilis'. Upright, evergreen perennial. H 5–6ft (1.5–2m), S 3ft (1m). Bears broad racemes of rich orange-red flowers, fading to yellow, in midsummer. Z7–11

K. northiae. Evergreen, rosette-forming perennial. H 5ft (1.5m), S 3ft (1m) or more. Has rather lax, broadly strap shaped, pointed, pale green leaves. In summer produces dense racemes of tubular, greenish-yellow flowers. Z7–11

K. 'Percy's Pride' illus. p.251.

K. 'Prince Igor' (illus. p.254). Semievergreen, clump-forming perennial. H 6ft (2m) or more, S 3ft (1m). Has long, lance-shaped, mid-green, basal leaves. In summer, upright stems bear racemes of tubular, yellow-tinged, reddish-orange flowers. Z6–9

K. rooperi, syn. *K.* 'C.M. Prichard' of gardens (illus. p.254). Robust, evergreen perennial. H 4ft (1.2m), S 2ft (60cm). Has arching, linear, dark green leaves. From early to late fall, produces broadly ellipsoid racemes of orange-red flowers, becoming orange-yellow. Z6–9

K. 'Royal Standard' (illus. p.254). Semievergreen, clump-forming perennial. H 3ft (1m) or more, S 22in (55cm). Bears long, lance-shaped, mid-green, basal leaves. In summer, upright stems bear 2-toned racemes of bright red buds opening to tubular, yellow flowers. Z6–9

K. 'Samuel's Sensation'. Semi-evergreen, clump-forming perennial. H 5½ft (1.6cm) or more, S 32in (80cm). Bears long, lance-shaped, mid-green, basal leaves. In summer, upright stems bear racemes of tubular, pinkish-red flowers aging to orange-yellow. Z6–9

K. 'Strawberries and Cream'. Largely herbaceous, rather compact, clump-forming perennial. H 2ft (60cm), S 14in (35cm). Has lance-shaped, mid-green, basal leaves. In summer, bears upright racemes of tubular, pinkish-ivory flowers, opening from darker buds. Z6–10

K. 'Tawny King' (illus. p.254). Largely herbaceous, clump-forming perennial. H 4ft (1.2m), S 3ft (90cm). Produces brownish-orange buds, opening to cream flowers on bronzed stems, from midsummer to early fall. Z6–11

K. 'Tetbury Torch'. Semievergreen, clump-forming perennial. H 3ft (1m), S 1½ft (45cm). Has lance-shaped, mid-green, basal leaves. In early summer and often in later summer bears erect racemes of tubular, orange flowers, fading to warm yellow. Z6–11

K. thomsonii* var. *thomsonii* 'Stern's Trip'. Stoloniferous perennial, deciduous in cold areas. H to 4½ft (1.4m), S 1½ft (45cm). Forms tufts of upright, linear leaves. From midsummer to late fall, bears a succession of curved, yellowish-orange flowers, to 2ft (60cm) long. Z6–10

K. 'Timothy'. Semievergreen, clump-forming perennial. H 3ft (1m), S 1½ft (45cm). Has long, lance-shaped, mid-green, basal leaves. In summer, upright, purplish-green stems bear racemes of tubular, warm peachy-pink flowers. Z6–11

K. 'Toffee Nosed' (illus. p.254). Semi-evergreen, clump-forming perennial. H 3ft (1m), S 1½ft (45cm). Has long, lance-shaped, mid-green, basal leaves. In summer, erect stems bear racemes of tubular, brown-orange flowers, fading to warm cream. Z6–11

***K. uvaria* 'Nobilis'.** See *K.* 'Nobilis'.

K. 'Wrexham Buttercup' (illus. p.254). Semievergreen, clump-forming perennial. H 4ft (1.2m), S 22in (55cm). Has long, lance-shaped, mid-green, basal leaves. In summer, upright stems bear broad racemes of tubular, bright yellow flowers, opening from greenish buds. Z6–9

Kochia. See *Bassia*.

KOELREUTERIA

SAPINDACEAE

Genus of deciduous, summer-flowering trees or shrubs, grown for their foliage, flowers and fruits. Unripened wood is susceptible to frost damage. Requires full sun, doing best in hot summers, and fertile, well-drained soil. Propagate by seed in fall or by root cuttings in late winter.

K. paniculata (Golden rain tree, Pride of India) illus. p.89. ***'Coral Sun'*** is a spreading tree, H 12ft (4m), S 10ft (3m), with reddish shoots, and leaf stalks with fernlike, orange-pink young leaves, maturing to fresh green, before turning orange and yellow in fall. Slow-growing, but can be pollarded to produce vigorous, more colorful young growth. Z6–9

KOHLERIA

GESNERIACEAE

Genus of erect perennials and subshrubs with scaly rhizomes, grown for their showy, tubular flowers. Grow in moist but well-drained soil and in full sun or semishade. Water sparingly in winter; over-watering will cause rhizomes to rot. Propagate in spring by division of rhizomes or by seed if available.

K. amabilis. Erect to prostrate, rhizomatous perennial. H and S 2ft (60cm). Ovate, scalloped, hairy leaves, to 3in (8cm) long, are often marked with silver and brown above. Small, nodding, tubular, deep pink flowers, with red-marked lobes, are borne in summer. Z14–15. **var. *bogotensis*** (syn. *K.* 'Bogotensis') is erect with velvety, green leaves, sometimes marked paler green above. Red-and-yellow flowers, with mouths spotted red, are borne from fall to early winter.

K. 'Bogotensis'. See *K. amabilis* var. *bogotensis*.

K. digitaliflora. See *K. warszewiczii*.

K. eriantha illus. p.470.

K. warszewiczii, syn. *K. digitaliflora*, illus. p.469.

KOLKWITZIA

CAPRIFOLIACEAE

Genus of one species of deciduous shrub, grown for its abundant flowers. Prefers full sun and fertile, well-drained soil. Cut out old shoots after flowering. Propagate by softwood cuttings in summer.

K. amabilis (Beauty bush). Deciduous, arching shrub. H and S 10ft (3m). Has peeling bark and ovate, dark green leaves. Bears bell-shaped, yellow-throated, white or pink flowers in late spring and early summer. Z5–9. ***'Pink Cloud'*** illus. p.114.

Korolkowia sewerzowii. See *Fritillaria sewerzowii*.

KUMARA

ASPHODELACEAE / ALOEACEAE

Genus of perennial succulents that gradually develop a shrubby, branched, corky trunk with age. Grown for their strap-shaped leaves, which are arranged in opposing rows like a folded fan. Requires free-draining compost. Propagate by seed sown in spring.

K. plicatilis, syn. *Aloe plicatilis*. Perennial succulent with leaves in a fan-shape on branching stems. H and S to 2ft (60cm). Strap-shaped, smooth, dull to glaucous green leaves have minutely toothed margins. In summer, unbranched flower stems, to 20in (50cm) long, produce cylindrical spikes of bell-shaped, scarlet flowers, 2in (5cm) long. Z11 (min. 41°F/5°C)

L

LABLAB

PAPILIONACEAE/LEGUMINOSAE

Genus of one species of deciduous, woody-stemmed, twining climber, grown for its attractive, pealike flowers (in tropics is grown for green manure and animal feed, and for its edible pods and seeds). Often raised as an annual. Frost tender. Grow in sun and in any well-drained soil. Propagate by seed in spring.

L. purpureus, syn. *Dolichos lablab*, *D. purpureus* (Australian pea, Hyacinth bean, Lablab), illus. p.203.

+ LABURNOCYTISUS

PAPILIONACEAE/LEGUMINOSAE

Deciduous tree, grown for its flowers. A graft hybrid between *Laburnum anagyroides* and *Cytisus purpureus*. Fully hardy. Requires full sun; grows in any but waterlogged soil. Propagate by grafting on laburnum in late summer.

+ ***L.* 'Adamii'.** Deciduous, spreading tree. H 25ft (8m), S 20ft (6m). In late spring and early summer, bears 3 types of blooms: yellow, laburnum flowers; purple, cytisus flowers; and laburnumlike, yellow and pinkish-purple flowers. Leaves, with 3 ovate leaflets, are dark green. Z5–7

LABURNUM

PAPILIONACEAE/LEGUMINOSAE

Genus of deciduous trees, grown for their profuse, pendent flower clusters in spring and summer. Fully hardy. Does best in full sun; grows in any but waterlogged soil. Seeds are very poisonous. Propagate species by seed in fall, hybrids by budding in summer. ⓘ All parts are highly toxic if ingested.

L. alpinum illus. p.89.

L. anagyroides, syn. *L. vulgare* (Common laburnum, Golden chain). Deciduous, spreading tree. H and S 25ft (8m). Leaves have 3 ovate leaflets and are gray-green. Short, pendent, dense clusters of large, pealike, yellow flowers are borne in late spring and early summer. Z5–7

L. vulgare. See *L. anagyroides*.

***L.* x *watereri* 'Vossii'** (Voss's laburnum) illus. p.84.

LACHENALIA

ASPARAGACEAE

Genus of winter- and spring-flowering bulbs with tubular or bell-shaped flowers; some have attractively mottled leaves. Useful as pot plants and in open borders. Half hardy. Requires light, well-drained soil and a sunny site. Plant in early fall; dry off in summer when foliage has died down. Propagate in fall by seed or freely produced offsets.

L. aloides, syn. *L. tricolor*, *L.* 'Tricolor'. Winter- and spring-flowering bulb. H 6–11in (15–28cm), S 2in (5cm). Has 2 strap-shaped, semierect, basal, purple-spotted, green leaves. Produces a spike of 10–20 pendent flowers, each 1¼in (3cm) long with a yellow tube shading to red at the apex and with flared, green tips. Z10–11

'Nelsonii' (syn. *L.* 'Nelsonii') illus. p.429.

var. *quadricolor* see *L. quadricolor*.

L. angustifolia. See *L. contaminata*.

L. contaminata, syn. *L. angustifolia*. Winter- and spring-flowering bulb. H 2½–10in (6–25cm), S 2in (5cm). Has narrowly strap-shaped, semierect leaves in a basal cluster. Bears a spike of bell-shaped, white flowers, ¼in (0.5cm) long, suffused and tipped with red and green. Z10–11

L. glaucina. See *L. orchioides* var. *glaucina*.

L. mutabilis. Winter- to spring-flowering bulb. H 4–18in (10–45cm), S 2in (5cm). Has 1 or 2 strap-shaped, semierect, basal leaves. Stem bears a loose spike of up to 25 tubular, flowers, ½in (1cm) long, purple or lilac in bud, opening to reddish-brown-tipped petals with a green tube base. Z10–11

***L.* 'Nelsonii'.** See *L. aloides* 'Nelsonii'.

L. orchioides. Winter- and spring-flowering bulb. H 6–16in (15–40cm), S 2in (5cm). Has 2 strap-shaped, semierect, basal, green leaves, sometimes spotted blackish- or purple-brown. Stem produces a dense spike of fragrant, semierect, tubular, white flowers, ½in (1cm) long, blue-tinged and tipped with green. Z10–11

var. *glaucina* (syn. *L. glaucina*) flowers in late winter and early spring. H to 12in (30cm), S 2–3in (5–8cm). Leaves are usually spotted purple. Bears a spike of fragrant, whitish-blue or pale lilac flowers.

L. quadricolor, syn. *L. aloides* var. *quadricolor*, illus. p.429.

L. rubida. Winter-flowering bulb. H 2½–10in (6–25cm), S 2in (5cm). Has 2 semierect, basal, strap-shaped, purple-spotted, green leaves. Bears a loose spike of pendent, tubular, red flowers, ¾–1¼in (2–3cm) long, shading to yellow at tips. Z10–11

L. tricolor. See *L. aloides*.

***L.* 'Tricolor'.** See *L. aloides*.

***Lactuca alpina*.** See *Cicerbita alpina*.

***Lactuca bourgaei*.** See *Cicerbita bourgaei*.

LAELIA

ORCHIDACEAE

See also ORCHIDS.

L. anceps (illus. p.466). Evergreen, epiphytic orchid for a cool greenhouse. H 10in (25cm). Lilac-pink flowers, 2½in (6cm) across, each with a deep mauve lip, are borne in tall spikes in fall. Has ovate, rigid leaves, 4–6in (10–15cm) long. Needs partial shade in summer.

L. cinnabarina. See *Cattleya cinnabarina*.

x *Laeliocattleya* Rojo gx 'Mont Millais'. See x *Cattlianthe* Rojo gx 'Mont Millais'.

LAGERSTROEMIA

LYTHRACEAE

Genus of deciduous or evergreen, summer-flowering shrubs and trees, grown for their flowers. Half hardy, or frost hardy in areas with hot summers where wood can ripen fully. Prefers fertile, well-drained soil and full light. Water potted specimens liberally when in full growth, less at other times. To maintain as shrubs, cut back hard the previous season's stems each spring. Propagate by seed in spring or by semiripe cuttings in summer.

L. indica (Crepe myrtle; illus. p.86). Deciduous, rounded tree or large shrub. H and S 25ft (8m). Bears trusses of flowers with strongly waved, pink, white, or purple petals in summer and early fall. Z9–11

'Cedar Red' has red-flushed young growth and deep vibrant red flowers.

Rhapsody in Pink ('Whit VIII') has dark red young growth and soft pink flowers.

'Rosea' has deep rose-pink flowers.

'Seminole' is compact and bears mid-pink flowers.

LAGUNARIA

MALVACEAE

Genus of one species of evergreen tree, grown for its flowers in summer–fall and its overall appearance. Frost tender. Prefers fertile, well-drained soil and full light. Water potted plants liberally when in full summer growth, moderately at other times. Pruning is tolerated if required. Propagate by seed in spring or by semiripe cuttings in summer. Under cover, red spider mite may be troublesome. ⓘ Contact with the seeds may irritate skin.

L. patersonii (Norfolk Island hibiscus, Queensland pyramidal tree). Fast-growing, evergreen, upright tree, pyramidal when young. H to 50ft (15m), S 25–40ft (8–12m). Ovate, rough leaves are matte-green above, whitish-green beneath. Bears hibiscuslike, rose-pink flowers, 2in (5cm) across, in summer. Z10–11 (min. 37–41ºF/3–5ºC)

LAGURUS

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.

L. ovatus (Hare's tail grass) illus. p.284.

LAMARCKIA

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.

L. aurea (Golden top). Tuft-forming, annual grass. H 12in (30cm), S 10in (25cm). Wiry stems have scattered, flat, twisted, broadly linear, pale green leaves. From mid-spring to summer, bears erect, dense, one-sided panicles of golden-yellow or whiteish-green spikelets. Needs sun. Z7–11

LAMIUM

Deadnettle

LAMIACEAE/LABIATAE

Genus of spring- or summer-flowering perennials, most of which are semi-evergreen, including a number of weeds; some species provide useful groundcover. Fully hardy. Prefers full or partial shade and moist but well-drained soil. Resents excessive winter wet. Propagate by stem-tip cuttings of non-flowering shoots in midsummer or by division in fall or early spring.

***L. galeobdolon* 'Florentinum'**, syn. *L.g.* 'Variegatum'. Semievergreen, carpeting perennial. H to 1ft (30cm), S indefinite. Ovate, mid-green leaves are marked with silver. Racemes of tubular, 2-lipped, lemon-yellow flowers are borne in summer. **'Variegatum'** see *L.g.* 'Florentinum'.

L. maculatum. Semievergreen, mat-forming perennial. H 8in (20cm), S 3ft (1m). Has mauve-tinged, often pink-flushed, leaves with central, silvery stripes. Clusters of hooded, mauve-pink flowers are borne in mid-spring. Z6–10. **'Album'** illus. p.255. **'Aureum'** (syn. *L.m.* 'Gold Leaf'), H 8in (20cm), S 2ft (60cm), has ovate, yellow leaves with paler white centers. Whorls of hooded, pink flowers are borne on short stems in summer. **'Beacon Silver'** has mauve-tinged, silver leaves, sometimes with narrow, green margins, and clear pale pink flowers. **'Gold Leaf'** see *L.m.* 'Aureum'. **'White Nancy'** illus. p.254.

L. orvala illus. p.260. **f. *albiflorum*** see *L.m.* 'Album'. **'Album'** (syn. *L.m.* f. *albiflorum*) is a clump-forming perennial. H and S 1ft (30cm). Forms a mound of toothed, softly hairy, dark green leaves. Spikes of whorled, white flowers open in late spring to summer. Z6–10

LAMPRANTHUS

AIZOACEAE

Genus of creeping, bushy, perennial succulents and subshrubs with daisylike flowers. Becomes woody after several years, when is best replenished. Plants are good for summer bedding, particularly in arid conditions. Leaves redden in strong sun. Frost tender. Requires full sun and very well-drained soil. Propagate by seed or stem cuttings in spring or fall.

L. aurantiacus. See *L. glaucoides*.

L. deltoides. See *Oscularia deltoides*.

L. glaucoides, syn. *L. aurantiacus*, illus. p.496.

L. haworthii. Erect to creeping, perennial succulent. H to 20in (50cm), S indefinite. Blue-gray leaves are cylindrical and 2in (5cm) long. In spring, bears abundant, daisylike, cerise flowers, 3in (7cm) across, that only open in sun. Z10–11 (min. 36ºF/2ºC)

L. roseus, syn. *Mesembryanthemum multiradiatum*. Creeping, perennial succulent. H to 20in (50cm), S indefinite. Has solid, 3-angled, mid- to glaucous green leaves, 2in (5cm) long. Daisylike, dark rose-red flowers, 1½in (4cm) across, open only in sun from spring to fall. Z10–11 (min. 36ºF/2ºC)

L. spectabilis illus. p.484.

LAMPROCAPNOS

PAPAVERACEAE

Genus of one species of perennial, previously included in the genus *Dicentra*, grown for its attractive sprays of pendent flowers. Fully hardy. Prefers moist but well-drained, humus-rich soil in partial shade. Propagate by seed in spring, or division in early spring or fall after leaves have died down.

L. spectabilis, syn. *Dicentra spectabilis*, illus. p.223. **'Alba'** (syn. *Dicentra spectabilis* 'Alba') illus. p.223.

LANTANA

VERBENACEAE

Genus of evergreen perennials and shrubs, grown for their flowers. Frost tender.

Needs full sunlight and fertile, well-drained soil. Water containerized specimens freely when in full growth, moderately at other times. Tip-prune young plants to promote a bushy habit and more flowering stems. Propagate by seed in spring or by semiripe cuttings in summer. Red spider mite and whitefly may be troublesome. ⓣ All parts may cause severe discomfort if ingested, and contact with foliage may irritate skin.
L. camara. Evergreen, rounded to spreading shrub. H and S 3–6ft (1–2m). Bears ovate, finely wrinkled, deep green leaves. From spring to fall, tiny, tubular, 5-lobed flowers, in dense, domed heads, open yellow, then turn red. Many color forms have been selected. Z11–12 (min. 50ºF/ 10ºC). **'Baluclush'** see *L.c.* Lucky Series Lucky Honey Blush.
Lucky Series Lucky Honey Blush ('Baluclush') illus. p.301.
L. delicatissima. See *L. montevidensis.*
L. montevidensis, syn. *L. delicatissima*, *L. sellowiana*, illus. p.310.
***L.* 'Radiation'** illus. p.324.
L. sellowiana. See *L. montevidensis.*
***L.* 'Spreading Sunset'** illus. p.324.

LAPAGERIA

PHILESIACEAE/LILIACEAE

Genus of one species of evergreen, woody-stemmed, twining climber, grown for its large, waxy blooms. Frost hardy to half hardy. Requires humus-rich, well-drained soil and partial shade. Water moderately, scarcely at all when not in full growth. Provide support. Thin out congested growth in spring. Propagate in spring by seed, soaked for 2 days before sowing, or in spring or fall by layering.
L. rosea (Chilean bellflower, Copihue) illus. p.202. **var. *albiflora*** is an evergreen, woody-stemmed, twining climber. H to 15ft (5m). Has oblong to ovate, leathery, dark green leaves. From summer to late fall, produces pendent, fleshy, narrowly bell-shaped, white flowers. Z9–11

Lapeirousia cruenta.
See *Freesia laxa.*
Lapeirousia laxa.
See *Freesia laxa.*

LARDIZABALA

LARDIZABALACEAE

Genus of evergreen, woody-stemmed, twining climbers, grown for their foliage and striking flowers. Male and female flowers are produced on the same plant in late fall to winter. Useful for growing on trellises or pergolas. Frost hardy. Grow in any well-drained soil and in a position in sun or partial shade. Propagate by seed in spring, or by stem cuttings in late summer or fall.
L. biternata. See *L. funaria.*
L. funaria, syn *L. biternata.* Evergreen, woody-stemmed, twining climber. H 10–12ft (3–4m). Rounded leaves have broadly ovate, leathery, dark green leaflets. In winter, produces brown flowers with tiny, whitish petals, the males in drooping spikes, the females solitary. In winter–spring, bears many-seeded, berrylike, purple fruits, 2–3in (5–8cm) long. Z9–11

LARIX

PINACEAE

See also CONIFERS.
L. decidua, syn. *L. europaea* (European larch), illus. p.97.
L. europaea. See *L. decidua.*
L. kaempferi, syn. *L. leptolepis* (Japanese larch). Fast-growing, deciduous, columnar conifer with a conical tip. H 80–100ft (25–30m), S 12–20ft (4–6m). Shoots are purplish-red and leaves are needlelike, flattened, grayish-green or bluish. Small cones have reflexed scales. Z4–9
L. leptolepis. See *L. kaempferi.*

LATHRAEA

OROBANCHACEAE

Genus of spreading perennials that grow as parasites on the roots of trees, in the case of *L. clandestina* on willow or poplar. True leaves are not produced. Fully hardy. Grows in dappled shade cast by host tree and prefers moist conditions. Roots resent being disturbed. Propagate by seed when fresh, in late summer.
L. clandestina (Toothwort) illus. p.260.

LATHYRUS

PAPILIONACEAE/LEGUMINOSAE

Genus of annuals and perennials, many of them tendril climbers, grown for their racemes of attractive flowers. Flowers are followed by long, thin seed pods. Fully to half hardy. Grow in humus-rich, fertile, well-drained soil and in full light. Provide support and remove dead flowers regularly. Cut down perennials in late fall. Propagate annuals by seed (soaked before sowing) in early spring or early fall, perennials by seed in fall, or by division in spring. Botrytis and mildew may cause problems. ⓣ Seeds may cause mild stomach upset if ingested.
L. grandiflorus (Everlasting pea). Herbaceous, tendril climber, spreading by suckers. H to 5ft (1.5m). Mid-green leaves usually consist of a pair of leaflets. Has unwinged stems and bears neat racemes of pink-purple and red flowers in summer. Z5–8
L. latifolius (Everlasting pea) illus. p.201. **'Albus'** is a herbaceous, tendril climber with winged stems. H 6ft (2m) or more. Leaves have broad stipules and a pair of leaflets. Bears small racemes of white flowers in summer and early fall. **'Rosa Perle'** has rose-pink flowers. Z5–9
L. magellanicus of gardens. See *L. nervosus.*
L. nervosus, syn. *L. magellanicus* of gardens (Lord Anson's blue pea). Herbaceous, tendril climber. H to 15ft (5m). Veined, leathery, gray-green leaves each have a pair of leaflets, a 3-branched tendril, and large stipules. Fragrant, purplish-blue flowers are borne in long-stalked racemes in summer. Z9–11
L. odoratus (Sweet pea). Moderately fast-growing, annual, tendril climber. H to 6ft (2m). Has ovate, mid- to dark green leaves with tendrils. Bears fragrant flowers with wine-red standard petals and purple wings and keels, from summer to early fall.Many cultivars have been developed, including dwarf, non-climbing forms. Z9–11
'Bristol' has long, firm stems bearing racemes of fragrant, pale violet-blue flowers. **'Charlie's Angel'** is free-flowering, producing racemes of usually 4, highly scented, waved, clear silvery blue flowers that age to lavender-blue. **'Cupid Pink'** illus. p.301. **'Gwendoline'** has strong stems that bear racemes of 4 fragrant, waved, white flowers, heavily suffused with lilac-pink; good for cutting and exhibiting. **'High Scent'** bears racemes of up to 5 or more fragrant, creamy-white flowers, edged with pale blue. **'Jilly'** produces racemes of 4 waved, lightly scented, creamy-white flowers. **'Just Julia'** bears racemes of large, fragrant, lightly ruffled, mid-blue flowers with a paler keel. **'Matucana'** is bushy and bears racemes of 4 fragrant, magenta-purple flowers. **'Mrs. Bernard Jones'** illus. p.201.
L. rotundifolius (Persian everlasting pea). Herbaceous, tendril climber with winged stems. H to 3ft (1m). Leaves each have narrow stipules, a pair of leaflets, and a 3-branched tendril. Bears small racemes of 3–8 dark purplish pink to brownish red flowers in summer. Z5–9
L. sylvestris (Everlasting pea, Perennial pea). Herbaceous, tendril climber with winged stems. H to 6ft (2m). Leaves each have narrow stipules, a pair of leaflets, and a terminal, branched tendril. In summer and early fall, bears racemes of 4–10 rose-pink flowers, marked with green and purple. Z5–9
L. vernus, syn. *Orobus vernus*, illus. p.260. **'Alboroseus'** is a clump-forming perennial. H and S 1ft (30cm). In spring, slender stems each bear 3–5 white-and-deep-pink flowers. Has fernlike, much-divided, soft leaves. Z5–9

LAURELIA

ATHEROSPERMATACEAE

Genus of evergreen trees and shrubs, grown for their aromatic foliage. Fully to frost hardy; needs shelter from cold winds. Requires sun or partial shade; grows in any but very dry soil. Propagate by semiripe cuttings in summer.
L. sempervirens, syn. *L. serrata* of gardens (Chilean laurel). Evergreen, broadly conical tree or shrub. H 50ft (15m), S 30ft (10m). Ovate, leathery leaves are glossy, dark green and very aromatic. Produces small, inconspicuous flowers in summer. Z9–11
L. serrata of gardens. See *L. sempervirens.*

LAURUS

Bay tree, Laurel

LAURACEAE

Genus of evergreen trees, grown for their foliage. Frost hardy, but foliage may be scorched by extremely cold weather or strong, cold winds. Needs a sheltered position in sun or partial shade and fertile, well-drained soil. In tubs may be grown well as standards, which should be trimmed during summer. Propagate by semiripe cuttings in summer or by seed in fall.
L. nobilis (Bay laurel, Sweet bay) illus. p.80. **f. *angustifolia*** (Willow leaf bay) is an evergreen large shrub or small conical tree. H to 40ft (12m), S 30ft (10m). Slightly hardier than the species with aromatic, leathery, narrow, lance-shaped pale green leaves. Bears small, star-shaped, pale yellowish-green flowers in spring. **'Aurea'** has golden yellow foliage. Z8–11

LAVANDULA

Lavender

LAMIACEAE/LABIATAE

Genus of evergreen, mainly summer-flowering shrubs and subshrubs, with entire or divided, often gray-green leaves, grown for their aromatic foliage and flowers. Can be used as a low hedge. Fully to half hardy. Needs full sun and fertile, well-drained soil. Trim hedges lightly in spring to maintain a compact habit. New growth is rarely produced from old wood. Propagate by semiripe cuttings in summer. See also feature panel p.158.
L. angustifolia (Lavender). Evergreen, bushy shrub. H 3ft (1m), S 4ft (1.2m). Has linear to narrowly ovate, aromatic, gray-felted leaves. In midsummer, produces small, fragrant, tubular, pale to deep purple flowers in dense spikes to 3in (8cm) long. Z5. **'Hidcote'** (syn. *L.* 'Hidcote'; illus. p.158), H 2ft (60cm), S 2½ft (75cm), is more compact, with dense spikes of fragrant, deep purple flowers and silver-gray leaves. **'Folgate',** H 2½ft (75cm), S 2½–3ft (75–90cm), is early flowering, with very bright violet-blue flowers; good for cutting. **'Imperial Gem'** (illus. p.158), H and S 2ft (60cm), is compact, with narrowly oblong, silvery-gray leaves, and dense spikes of deep purple flowers.
Little Lady ('Batlad'), H and S 16in (40cm), is compact and prolific, with light blue flowers; suitable for hedging.
Little Lottie ('Clarmo') (illus. p.158), H and S 1ft (30cm), is dwarf, with bright gray-green leaves and short spikes of pale pink flowers. **'Loddon Blue'** (illus. p.158), H and S 20in (50cm), is compact with deep blue-purple flowers. **'Loddon Pink'**, H 1½ft (45cm), S 2ft (60cm), is more compact in habit, with pale pink flowers. **'Miss Katherine'** (illus. p.158), H 2½ft (75cm), S 2ft (60cm), has light pink flowers with silver-green calyces. **'Munstead'**, H 1½ft (45cm), S 2ft (60cm), bears purple-blue flowers **'Nana Alba'**, H and S 1ft (30cm), is very compact, with white flowers. **'Wendy Carlile'** (illus. p.158), H to 1ft (30cm), is similar to 'Nana Alba', but with a more erect, uniform habit.
***L.* x *chaytoriae* 'Richard Gray'.** Evergreen, bushy, compact shrub. H 20in (50cm), S 2ft (60cm). Has linear, aromatic, silvery-gray leaves. Long, unbranched stalks bear vivid, violet-purple flowers in dense spikes, to 3–4in (8–10cm) long, in summer. Z8–11. **'Sawyers'** illus. p.157.
L. dentata. Evergreen, bushy shrub. H 3ft (1m), S 5ft (1.5m). Aromatic leaves are fernlike, toothed and gray-green. Unbranched stalks bear dense spikes, to 2in (5cm) long, of slightly fragrant, purple-blue flowers, tipped with purpled bracts, in mid- to late summer. Z9–11
***L.* 'Fathead'** (illus. p.158). Evergreen, vigorous, rounded, bushy shrub. H and S 16in (40cm). Has linear, aromatic, gray-green leaves. In late spring and summer,

bears dense, ovoid-oblong spikes, to 1¼in (3cm) long, of dark purple flowers, topped by conspicuous purple bracts that fade to pink. Z5–9
***L.* x *ginginsii* 'Goodwin Creek Grey'.** Evergreen, vigorous, compact shrub. H 2–3ft (60–90cm), S 3ft (90cm). Has linear-oblong, toothed, aromatic, silvery gray leaves. Short stems bear dense spikes, to 4in (10cm) long or more, of fragrant, soft lavender-blue flowers in summer and early fall. Z5–9
***L.* 'Helmsdale'** (illus. p.158). Evergreen, compact, bushy shrub. H and S 28in (70cm). Has linear, aromatic, gray-green leaves. Ovoid-oblong spikes, to 1¼in (3cm) long, bear fragrant, dark purple flowers, topped by conspicuous burgundy-red bracts from late spring to summer. Z5–9
***L.* 'Hidcote'.** See *L angustifolia* 'Hidcote'.
L.* x *intermedia (English lavender, Lavandin). Evergreen, spreading shrub. H and S 12–20in (30–50cm). Has oblong to lance-shaped to almost spoon-shaped, very aromatic, gray-green leaves, covered in fine, silvery-gray hairs. In summer, light blue to violet flowers are borne in spikes 4–8in (10–20cm) long. The main source of commercial lavender, lavandine. Z5–9. **'Alba'** (illus. p.158) is a vigorous, erect shrub with white flowers, occasionally tinted pale purple. **'Hidcote Giant'**, H 2½ft–3ft (75–100cm), S 3ft (1m), has dense spikes of violet-blue flowers; excellent for cutting. **Old English Group**, H to 20in (50cm), has purple flowers borne on long, erect stems.
L. lanata (illus. p.158). Evergreen, bushy shrub. H 2½ft (75cm), S 3ft (90cm). Young shoots and linear leaves are covered with whitish "wool." Bears dense spikes, to 4in (10cm) long, of fragrant, dark purple flowers on unbranched stems in late summer. Z9–11
L. pedunculata*.** Evergreen, erect shrub. H and S 20–32in (50–80cm). Has linear, gray-green leaves, and bears ovoid, densely felted flower spikes, ¾–1½in (2–4cm) long, topped by 4–6 purplish violet, sterile bracts on stalks, 1ft (30cm) long, in summer. Z9–11. **subsp. *pedunculata (syn. *L. stoechas* subsp. *pedunculata*) has violet-blue apical bracts with red-purple mid-ribs. **subsp. *pedunculata* 'James Compton'** (illus. p.158) has purple-margined, green stalks and very dark purple apical bracts.
***L.* 'Pretty Polly'.** Evergreen, compact shrub. H and S 16in (40cm). Has linear, aromatic, gray-green leaves. In late spring and summer, bears dense, ovoid-oblong flower spikes, to 1¼in (3cm) long, of fragrant, purple-blue flowers, topped by white bracts that are veined green. Z4–9
***L.* 'Regal Splendour'** (illus. p.158). Evergreen, vigorous, erect shrub. H 2–3ft (60–90cm), S 1–2ft (30–60cm). Has linear, aromatic, gray-green leaves. In late spring and summer, bears dense, ovoid-oblong flower spikes, to 1in (2.5cm) long, of fragrant, rich violet-blue flowers, topped by wavy-edged, purple-violet bracts, on stalks to 5in (12cm) long. Z8–10
L. stoechas (French lavender; illus. p.158). Evergreen, compact, bushy shrub. H and S 2ft (60cm). Has linear, gray-green leaves. Fragrant, dark purple flowers, with purple bracts, are borne in dense, ovoid-oblong spikes, to 1¼in (3cm) long, on short, unbranched stalks, to 1¼in (3cm) long, from late spring to summer. Z6–10. **subsp. *pedunculata*** see *L. pedunculata* subsp. *pedunculata*. **subsp. *stoechas* f. *leucantha*** is vigorous, with short spikes of white flowers topped with white bracts. **subsp. *stoechas* f. *leucantha* 'Snowman'** (illus. p.158) is similar, but more compact. **subsp. *stoechas* f. *rosea*** produces pink to rose-red flowers with reddish-purple bracts. **subsp. *stoechas* f. *rosea* 'Kew Red'** (illus. p.158), H and S 1½ft (45cm), is compact and upright, producing spikes of bright cerise-purple flowers, topped by pale purple bracts.
***L.* 'Willow Vale'** (illus. p.158). Evergreen, vigorous, upright shrub. H 2½ft (75cm), S 2ft (60cm). Has linear, aromatic yellow-green to gray leaves. In late spring and summer, erect stems bear dense spikes, to 1¼in (3cm) long, of fragrant, deep violet flowers, topped by reddish purple bracts. Z7–9

LAVATERA

Tree mallow

MALVACEAE

Genus of mainly summer-flowering annuals, biennials, perennials, and semi-evergreen subshrubs and shrubs. Fully to frost hardy. Needs sun and well-drained soil. Propagate perennials, subshrubs, and shrubs by softwood cuttings in early spring or summer, annuals and biennials by seed in spring or early fall.
L. assurgentiflora illus. p.133.
L. cachemiriana, syn. *L. cachemirica*. Semievergreen, woody-based perennial or subshrub. H to 8ft (2.5m), S to 34ft (1.2m). Has wiry stems bearing panicles of trumpet-shaped, silky, clear pink flowers in summer and ivy-shaped, downy, mid-green leaves. Z7–10
***L. cachemirica*.** See *L. cachemiriana*.
***L.* x *clementii* 'Barnsley'.** Vigorous, semievergreen subshrub. H and S 3–6ft (1–2m). Mid-green, palmate leaves have 3–5 lobes. Throughout summer bears profuse racemes of open funnel-shaped, red-eyed, white flowers, aging to soft pink, with deeply notched petals. Z7–10. **'Bredon Springs'** produces mauve-flushed, dusky pink flowers. **'Burgundy Wine'** produces rich dark pink flowers with darker veins. **'Candy Floss'** bears pale pink flowers throughout summer. **'Rosea'** (syn. *L. olbia* 'Rosea') illus. p.136.
***L. olbia* 'Rosea'.** See *L.* x *clementii* 'Rosea'.
***L. trimestris* 'Novella Hot Pink'.** Compact and branching annual. H 20in (50cm), S 1ft (30cm). Produces shallowly trumpet-shaped, rose-pink flowers above deep green leaves in summer. Excellent for growing in containers. H5. **'Mont Blanc'** is compact, with very dark green foliage and white flowers. **'Silver Cup'** illus. p.305.

LAYIA

ASTERACEAE/COMPOSITAE

Genus of annuals, grown for their daisylike flowers, borne profusely in summer. Useful for a hot, dry site. Fully hardy to half hardy. Grow in sun and in poor to fertile, very well-drained soil. Propagate by seed sown outdoors in spring or early fall.
***L. elegans*.** See *L. platyglossa*.
L. platyglossa, syn. *L. elegans* (Tidy tips). Fast-growing, upright, bushy annual. H 1½ft (45cm), S 1ft (30cm). Has lance-shaped, grayish-green leaves. Daisylike flower heads, 2in (5cm) across, with white-tipped, yellow ray petals and yellow centers, are produced from early summer to early fall. Suitable for cutting. Z7–10

***Lechenaultia*.** See *Leschenaultia*.

LEDEBOURIA

ASPARAGACEAE

Genus of deciduous, evergreen or semievergreen bulbs grown for their attractively marked, ornamental, narrowly lance-shaped leaves and their racemes of small, bell- or urn-shaped flowers, that are reminiscent of lily-of-the-valley (*Convallaria*). Good pot plants for a cool greenhouse. Frost hardy to frost tender. Needs full light, to allow leaf marks to develop well, and loose, open soil. Propagate by offsets in spring.
L. cooperi, syn. *Scilla adlamii*, *S. cooperi*. Deciduous, very variable bulb. H 2–8in (5–20cm), S 2in (5cm). Semierect, basal, mid- to dark green leaves, with bold purple stripes, die away in winter. In summer, bears racemes of up to 50 bell-shaped, small purple-pink flowers, tipped or striped green. Z10–11
L. socialis, syn. *L.s.* var. *violacea*, *Scilla violacea*, illus. p.421.

***Ledum groenlandicum*.** See *Rhododendron groenlandicum*.
***Leiophyllum buxifolium*.** See *almia buxifolia*.
***Lemaireocereus euphorbioides*.** See *Neobuxbaumia euphorbioides*.
***Lemaireocereus marginatus*.** See *Pachycereus marginatus*.
***Lemaireocereus thurberi*.** See *Stenocereus thurberi*.
***Lemboglossum bictoniense*.** See *Rhynchostele bictoniensis*.
***Lemboglossum cervantesii*.** See *Rhynchostele cervantesii*.
***Lemboglossum cordatum*.** See *Rhynchostele cordata*.
***Lemboglossum rossii*.** See *Rhynchostele rossii*.
***Lembotropis nigricans*.** See *Cytisus nigricans*.

LEONOTIS

LAMIACEAE/LABIATAE

Genus of annuals, evergreen and semi-evergreen perennials, subshrubs, and shrubs, grown for their flowers and overall appearance. Half hardy. Needs full sun and rich, well-drained soil. Water containerized specimens freely when in full growth, much less at other times of year. Cut back perennials, subshrubs, and shrubs to within 6in (15cm) of the ground in early spring. Propagate by seed in spring or by greenwood cuttings taken in early summer.
L. leonurus (Lion's ear) illus. p.141.

LEONTOPODIUM

Edelweiss

ASTERACEAE/COMPOSITAE

Genus of short-lived, spring-flowering, woolly perennials, grown for their distinctive flower heads. Suitable for rock gardens, containers, and alpine troughs. Fully hardy. Requires sun, gritty, well-drained soil, and a deep collar of grit to improve surface drainage. Shelter from prevailing, rain-bearing winds, because the crowns are extremely intolerant of winter wet and may rot off. Propagate by division in spring, or by seed when fresh. Many seeds are not viable.
***L. alpinum*.** See *L. nivale* subsp. *alpinum*.
L. nivale* subsp. *alpinum, syn. *L. alpinum* (Edelweiss), illus. p.332.
***L. stracheyi*.** Mound-forming, spreading, woolly perennial. H to 20in (50cm), S to 1ft (30cm). Star-shaped, glistening, yellowish white flower heads are produced among thick, ovate, silver leaves in spring. A good plant for an alpine house. Z4–9

***Leopoldia comosa*.** See *Muscari comosum*.

LEPISMIUM

CACTACEAE

Genus of epiphytic and lithophytic (growing on rocks) perennial cacti often pendulous in habit with cylindrical, ribbed, angled, or flat, usually segmented stems. Small, funnel- to disk-shaped flowers are followed by spherical, often purple or red berries. Frost tender. Needs partial shade and rich, well-drained soil. Prefers 80% relative humidity—higher than for most cacti. Give only occasional, very light watering in winter. Propagate by seed or stem cuttings in spring or summer.
L. warmingianum, syn. *Rhipsalis warmingiana*. Erect, then pendent, perennial cactus. H 3ft (1m), S 20in (50cm). Has slender, notched, cylindrical, green branches, sometimes tinged red or brown, with 2–4 angles, and green-white flowers in winter and spring, followed by violet berries. Z11–12 (min. 50ºF/10ºC)

LEPTINELLA

ASTERACEAE/COMPOSITAE

Genus of annuals and creeping perennials that are effective as low groundcover. Fully hardy. Grow in full sun and sharply drained, moderately fertile soil. Propagate by seed when ripe or by division in spring.
L. atrata, syn. *Cotula atrata*. Evergreen, creeping, tufted perennial. H to 6in (15cm), S to 8in (20cm). Has small, finely cut, grayish-green leaves and bears blackish-red flower heads in late spring and early summer. Not easy to grow successfully. Z9–10. **subsp. *luteola*** illus. p.349.

LEPTOSPERMUM

MYRTACEAE

Genus of evergreen trees and shrubs, grown for their foliage and small, often profuse flowers. Grows well in coastal areas if not too exposed. Borderline fully hardy to frost tender; in cold areas best

planted against a south- or west-facing wall. Requires a position in full sun and fertile, well-drained soil. Propagate by semiripe cuttings in summer.
L. humifusum. See *L. rupestre*.
L. rupestre, syn. *L. humifusum*, illus. p.151.
L. scoparium (Manuka, New Zealand tea-tree) illus. p.130. **'Appleblossom'** is an evergreen, rounded shrub. H and S 10ft (3m). Narrowly lance-shaped, aromatic, gray-green leaves set off a profusion of large, star-shaped, white flowers overlaid with pink, in late spring and summer. **'Kiwi'**, H 3ft (1m), is a dwarf form with purple-tinged young foliage and dark crimson flowers. Good for a rock garden or alpine house. **'Nicholsii'** has bronze-purple leaves and smaller, crimson flowers. **'Red Damask'** illus. p.123. **'Silver Sheen'** has softly hairy silvery leaves on reddish shoots and white flowers. **'Snow Flurry'** has double white flowers. Z8–11

LESCHENAULTIA

SYN. LECHENAULTIA

GOODENIACEAE

Genus of evergreen shrubs, subshrubs, and perennials, grown for their showy flowers. Frost tender. Needs full light and peaty, well-drained soil with few phosphates and nitrates. Water pot plants moderately during growing season, sparingly at other times. Shorten overlong stems after flowering. Propagate by seed in spring or by semiripe cuttings in summer. Most species are not easy to grow under glass; good ventilation is essential.
L. floribunda. Evergreen, shrubby, woody-based perennial or short-lived shrub. H 18in (45cm), S 14in (35cm). Has narrowly oblong to linear, pointed, mid-green leaves, and in spring-summer, short, tubular, pale blue flowers, with 5 angular petals, in terminal clusters. Z10–11 (min. 41–45°F/5–7°C)

LEUCADENDRON

PROTEACEAE

Genus of evergreen shrubs and trees, grown for their flower heads from fall to spring and for their foliage. Frost hardy to frost tender. Needs full light and sharply drained soil, mainly of sand and peat, ideally with very little nitrogen and phosphates. Water potted specimens moderately while in growth, sparingly at other times. Propagate by seed in spring.
L. argenteum (Silver tree) illus. p.451.
***L.* 'Safari Sunset'.** Evergreen, erect, freely branching, vigorous shrub. H to 8ft (2.5m), S to 6ft (1.8m) or more. Has narrowly oblong leaves, deep green flushed purple-red, more colorful when young. From fall to spring, bears yellowish-green flower heads surrounded by light red bracts, maturing purple red, fading to yellow. Z9–11

LEUCANTHEMELLA

ASTERACEAE/COMPOSITAE

Genus of hairy perennials, grown for their daisylike flower heads in fall. Fully hardy. Grow in full sun or partial shade and reliably moist soil. Propagate by division or basal cuttings in spring.
L. serotina, syn. *Chrysanthemum serotinum*, *C. uliginosum,* illus. p.220.

LEUCANTHEMOPSIS

ASTERACEAE/COMPOSITAE

Genus of dwarf, tufted, clump- or mat-forming perennials, grown for their solitary, daisylike flower heads in summer. Fully hardy. Grow in full sun and sharply drained soil. Propagate by seed as soon as they are ripe, or by division or basal cuttings taken in spring.
L. alpina, syn. *Chrysanthemum alpinum* (Alpine chrysanthemum). Tuft-forming, short-lived perennial. H 4in (10cm), S 8in (20cm). Small tufts of deeply cut leaves are produced from short, rhizomatous stems. In summer, bears large, white flower heads with yellow centers. Good for rock or scree gardens, or alpine planters. Z5–9

LEUCANTHEMUM

ASTERACEAE/COMPOSITAE

Genus of annuals and perennials, grown for their attractive flowers. Fully to frost hardy. Cultivars of *L.* x *superbum* are valued for their profusion of large daisylike summer flowers. Some species are suitable for rock gardens. Needs full sun and well-drained soil. Taller cultivars require staking. Propagate species by seed or division, cultivars by division only.
L.* x *superbum, syn. *Chrysanthemum maximum* of gardens, *C.* x *superbum* (Shasta daisy). Robust perennial. H 3ft (90cm), S 2ft (60cm). Has inversely lance-shaped, toothed, glossy, almost fleshy, dark green basal leaves and shorter, stalkless, stem leaves. From early summer to early fall, bears solitary, single or double, white flower heads, 4–5in (10–12cm) across, with yellow disk florets, paler in the double-flowered forms. Z5–9. **'Aglaia'** illus. p.230. **'Elizabeth'** has large, single, pure white flower heads. **'Esther Read'** illus. p.263. **'Sonnenschein'** illus. p.231. **'Wirral Pride'** illus. p.246. **'Wirral Supreme'** is double with short, central florets.

LEUCHTENBERGIA

CACTACEAE

Genus of one species of perennial cactus. Looks like *Agave* in foliage, but its flowers, seed pods, and seeds are similar to *Ferocactus*. Tubercles eventually form on short, rough, woody stems. Frost tender. Needs full sun and very well-drained soil. Keep completely dry in winter; water sparingly from spring to fall. Propagate by seed in spring or summer.
L. principis illus. p.490.

LEUCOCORYNE

ALLIACEAE/LILIACEAE

Genus of spring-flowering bulbs with loose heads of flattish flowers. Frost tender. Needs sun and well-drained soil. Plant in fall, water well during their growing season, and keep almost dry when dormant in summer. Propagate by seed, or offsets in fall.
L. ixioides (Glory-of-the-sun). Spring-flowering bulb. H 18in (45cm), S 3in (8cm). Has long, narrow, semierect, basal leaves that wither by flowering time. Wiry, slender flower stem has a loose head of up to 10 lilac-blue flowers. Z10–11 (min. 41°F/5°C)

LEUCOGENES

New Zealand edelweiss

ASTERACEAE/COMPOSITAE

Genus of evergreen, woody-based perennials, grown for their foliage. Good for alpine houses in areas where summers are cool. Borderline fully hardy. Needs sun and gritty, well-drained, peaty soil. Resents winter wet. Propagate by seed when fresh or by softwood cuttings in late spring.
L. grandiceps illus. p.356.
L. leontopodium, syn. *Raoulia leontopodium* (North Island edelweiss). Evergreen, rosetted perennial. H and S 5in (12cm). Overlapping, oblong to ovate leaves are silvery-white to yellowish. Bears up to 15 small, star-shaped, woolly, silvery-white flower heads, surrounded by thick, felted, white bracts, in early summer. Z7–10

LEUCOJUM

Snowflake

AMARYLLIDACEAE

Genus of spring-flowering bulbs, grown for their pendent, bell-shaped, white or pink flowers. Fully hardy. Some species prefer a moist, partially shaded site, others do best in sun and well-drained soil. Propagate by division in spring or early fall or by seed in fall.
L. aestivum (Summer snowflake) illus. p.436. **'Gravetye Giant'** illus. p.434.
L. fallale. See *Acis fallalis*.
L. hiemale. See *Acis hiemalis*.
L. nicaeense. See *Acis hiemalis*.
L. roseum. See *Acis rosea*.
L. vernum (Spring snowflake) illus. p.414.

LEUCOPHYTA

Cushion bush

ASTERACEAE/COMPOSITAE

Genus of annuals, evergreen perennials, and small shrubs, often used as summer bedding. Frost tender. Needs well-drained soil and full light. Water container plants moderately when in full growth, sparingly at other times. Remove tips to promote a bushy habit. Propagate by semiripe cuttings in late summer. Botrytis may be troublesome if plants are kept too cool and damp during winter.
L. brownii, syn. *Calocephalus brownii*, illus. p.315.

LEUCOSPERMUM

PROTEACEAE

Genus of evergreen shrubs and small trees grown for their flower heads. Frost hardy to frost tender. Needs full light and sandy, well-drained soil with few nitrates and phosphates. Water container plants moderately when in growth, sparingly at other times. Propagate by seed in spring. Not easy to cultivate long term under glass; good ventilation is essential.
L. cordifolium, syn. *L. nutans.* Evergreen, rounded to spreading, well-branched shrub. H to 6ft (2m), S 5–10ft (1.5–3m). Elongated, heart-shaped, blue-gray leaves each have a 3-toothed tip. In summer, very slender, tubular, brick-red to orange flowers, each with a long style, are borne in tight heads that resemble single blooms. Z10–11 (min. 41°F/5°C)
L. nutans. See *L. cordifolium.*
L. reflexum illus. p.456.

LEUCOTHÖE

ERICACEAE

Genus of evergreen, semievergreen, or deciduous shrubs, grown for their white flowers and their foliage. Fully hardy. Needs shade or partial shade and moist, peaty, acid soil. Propagate by semiripe cuttings in summer.
L. catesbaei of gardens. See *L. fontanesiana*.
L. fontanesiana, syn. *L. catesbaei* of gardens, *L. walteri* (Switch Ivy). Evergreen, arching shrub. H 5ft (1.5m), S 10ft (3m). Lance-shaped, leathery, glossy, dark green leaves have long points and sharp teeth. Short racemes of small, urn-shaped, white flowers are borne beneath shoots from mid- to late spring. Z6–9. **'Rainbow'** illus. p.167. **SCARLETTA ('Zeblid')** see *L.* SCARLETTA ('Zeblid'). Z6–9
L. keiskei. Evergreen shrub with erect or semiprocumbent stems. H and S 2ft (60cm). Ovate, thin-textured, glossy, dark green leaves have a red flush when young and a leathery appearance. Bears pendent, urn-shaped, white flowers from leaf axils in summer. Good for a rock garden or alpine house. Prefers mild, damp climates. Z5–9
***L.* SCARLETTA ('Zeblid').** Upright, evergreen shrub with arching branches. H and S 3–5ft (1–1.5m). Has dark red-purple young foliage, which turns dark green, then bronze to burgundy-red in winter. Plant in good light for best color. Z5–8
L. walteri. See *L. fontanesiana*.

LEWISIA

PORTULACACEAE

Genus of perennials, some of which are evergreen, with rosettes of succulent leaves and deep tap roots. Most species are good in alpine houses, troughs, and rock gardens. Fully to frost hardy. Evergreen species need partially shaded, humus-rich, moist or well-drained, neutral to acid soil and resent water in their rosettes at all times. Herbaceous species shed their leaves in summer and require sun and well-drained, neutral to acid soil; dry off after flowering. Propagate herbaceous species by seed in spring or fall, evergreen species by seed in spring or by offsets in summer. Seed of *L.* Cotyledon Hybrids may not come true.
L. columbiana. Evergreen, basal-rosetted perennial. H and S to 6in (15cm). Has thick, narrowly oblong, flat, glossy, green leaves. In early summer, bears terminal sprays of small, cup-shaped, deeply veined, white to deep pink flowers. Prefers moist soil. Z5–9
***L.* Cotyledon Hybrids** illus. p.340.
***L.* 'George Henley'** illus. p.338.
L. nevadensis. Loose, basal-rosetted perennial. H and S to 4in (10cm). In summer, large, almost stemless, cup-shaped, white

flowers are borne above small clusters of strap-shaped, dark green leaves. Z5–9
L. rediviva (Bitter root) [pink form] illus. p.365; [white form] illus. p.360.

LEYCESTERIA

CAPRIFOLIACEAE

Genus of suckering, deciduous shrubs, grown for their showy flower clusters. Fully hardy to half hardy. Needs full sun and fertile, well-drained soil. Propagate by softwood cuttings in summer or by seed or division in fall.
L. formosa (Himalayan honeysuckle, Pheasant berry). Deciduous, upright shrub. H and S 6ft (2m). Has blue-green shoots and slender, ovate, dark green leaves. In summer and early fall, small, funnel-shaped, white flowers open at tip of each pendent cluster of purplish-red bracts, followed by spherical, reddish-purple fruits. Cut weak shoots to ground level in early spring. Z7–9. **Golden Lanterns ('Notbruce')** has soft yellow leaves.

LEYMUS

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
L. arenarius, syn. *Elymus arenarius* (Lyme grass). Vigorous, spreading, herbaceous, rhizomatous, perennial grass. H to 5ft (1.5m), S indefinite. Has broad, glaucous leaves and stout, terminal spikes of grayish-green flowers on erect stems in late summer. Useful for binding coastal dunes. Z6–9

LIATRIS

Gay feathers

ASTERACEAE/COMPOSITAE

Genus of summer-flowering perennials with thickened, cormlike rootstocks. Fully hardy. Prefers sun and well-drained soil. Propagate by division in spring.
L. callilepis of gardens. See *L. spicata*.
L. pycnostachya (Kansas gay feather). Clump-forming perennial. H 4ft (1.2m), S 1ft (30cm). In summer, bears tall spikes of clustered, feathery, mauve-pink flower heads. Grasslike, dark green leaves form basal tufts.
L. spicata, syn. *L. callilepis* of gardens, illus. p.438.

LIBERTIA

IRIDACEAE

Genus of rhizomatous perennials, grown for their foliage, decorative seed pods, and flowers. Borderline fully hardy to frost hardy. Needs a sheltered, sunny, or partially shaded site and well-drained soil. Propagate new plants by division in spring, or by seed in fall or spring.
L. grandiflora (New Zealand satin flower) illus. p.230.
L. ixioides. Clump-forming, rhizomatous perennial. H and S 2ft (60cm). Produces panicles of saucer-shaped, white flowers in summer. Grasslike, dark green leaves turn orange-brown during winter. Z9–11.
'Goldfinger' illus. p.277.

Libocedrus chilensis. See *Austrocedrus chilensis*.
Libocedrus decurrens. See *Calocedrus decurrens*.
Libonia floribunda. See *Justicia floribunda*.

LIGULARIA

ASTERACEAE/COMPOSITAE

Genus of perennials, grown for their foliage and large, daisylike flower heads. Fully hardy. Grow in sun or partial shade and in moist but well-drained soil. Propagate by division in spring or by seed in fall or spring. Prone to slug and snail attack.
***L. clivorum* 'Desdemona'.** See *L. dentata* 'Desdemona'.
***L.* 'Britt Marie Crawford'** illus. p.445.
***L. dentata* 'Desdemona'** (syn. *L. clivorum* 'Desdemona', *Senecio clivorum* 'Desdemona') is a compact, clump-forming perennial. H 4ft (1.2m), S 2ft (60cm). Heart-shaped, long-stalked, leathery, basal, dark brownish-green leaves, are almost mahogany beneath. In mid- to late summer, bears terminal clusters of large, daisylike, vivid orange flower heads on branching stems. Z4-8
***L.* 'Gregynog Gold'.** Clump-forming perennial. H to 6ft (1.8m), S 3ft (1m). Leaves are large, heart-shaped, and deep green. Conical panicles of daisylike, orange-yellow flower heads are borne from mid- to late summer. Z4–8
L. przewalskii, syn. *Senecio przewalskii*, illus. p.445.
L. stenocephala. Loosely clump-forming perennial. H 5ft (1.5m), S 3ft (1m). Has jagged-edged, round, mid-green leaves. Large heads of daisylike, yellow-orange flowers open on purplish stems from mid- to late summer. Z4–8
***L.* 'The Rocket'** illus. p.219.
L. tussilaginea. See *Farfugium japonicum*.

LIGUSTRUM

Privet

OLEACEAE

Genus of deciduous, semievergreen or evergreen shrubs and trees, grown for their foliage and, in some species, flowers. Fully to frost hardy. Requires sun or partial shade, the variegated forms doing best in full sun. Thrives on any well-drained soil, including chalky soil. All except *L. lucidum* occasionally need cutting back in mid-spring to restrict growth. Propagate by semiripe cuttings in summer. ⓘ All parts may cause severe discomfort if ingested.
L. japonicum (Japanese privet). Evergreen, bushy, dense shrub. H 10ft (3m), S 8ft (2.5m). Has ovate, glossy, very dark green leaves and, from midsummer to early fall, large, conical panicles of small, tubular, white flowers with lobes. Z7–10.
'Coriaceum' see *L.j.* 'Rotundifolium'.
'Rotundifolium', syn. *L.j.* 'Coriaceum', is slow-growing, and produces a dense mass of rounded, leathery leaves.
L. lucidum (Chinese privet). Evergreen, upright shrub or tree. H 30ft (10m), S 25ft (8m). Bears large, ovate, glossy, dark green leaves. Produces large panicles of small, tubular, white flowers, with 4 lobes, in late summer and early fall. Z7–10.
'Excelsum Superbum' has bright green leaves, marked with pale green and yellow-edged, and small, tubular, white flowers. **'Tricolor'** has narrow, green and gray-green leaves with creamy white margins, pink-tinged when young.
L. ovateifolium illus. p.119. **'Aureum'** is a vigorous, evergreen or semievergreen, upright, dense shrub. H 12ft (4m), S 10ft (3m). Leaves are ovate, glossy, and mid-green, broadly edged with bright yellow. Dense panicles of small, rather unpleasantly scented, tubular, white flowers, with 4 lobes, are borne in mid-summer and are followed by spherical, black fruits. Cut back hedges to 1ft (30cm) after planting and prune hard for first 2 years; then trim as necessary during the growing season. **'Vicaryi'**, syn. *L.* 'Vicaryi', illus. p.140. Z5–9
L. sinense illus. p.112.
***L.* 'Vicaryi'**. See *L. ovateifolium* 'Vicaryi'.
L. vulgare. Deciduous or semievergreen, bushy shrub. H and S 10ft (3m). Leaves are narrowly lance-shaped and dark green. Bears panicles of small, strongly scented, tubular, white flowers, with 4 lobes, from early to midsummer, then spherical, black fruits. Cut back hedges to 1ft (30cm) after planting and prune hard for the first 2 years; then trim as necessary during the growing season. Z4–8

LILIUM

Lily

LILIACEAE

Genus of mainly summer-flowering bulbs, grown for their often fragrant, brightly colored flowers. Each fleshy-scaled bulb produces one unbranched, leafy stem; in some cases roots develop on the stem just above the bulb. Glossy, mid- to dark green leaves are mostly lance-shaped or linear, to 9in (22cm) long, and arranged in whorls or spirals, or are scattered alternately up the stems. Flowers, usually several per stem, are mainly trumpet- to bowl-shaped or with the 6 petals strongly reflexed to form a turkscap shape. (Petals of *Lilium* are known botanically as perianth segments.)

Three categories of flower size—small, medium, and large—are used in the descriptions below. For turkscap, bowl-, cup- and star-shaped flowers: small is up to 2in (5cm) across; medium is 2–3in (5–7cm) across; large is over 3in (7cm) across. For trumpet- and funnel-shaped flowers: small is up to 3in (7cm) long; medium is 3–4in (7–10cm) long; large is over 4in (10cm) long. Most lilies vary between 3ft (1m) and 6ft (2m) in height, although a few may reach 10ft (3m).

They do not spread widely—mostly to 1ft (30cm)—therefore only height measurements are given below. Fully hardy to half hardy. Need sun and well-drained soil, unless otherwise stated. Propagate by seed in fall or spring, by bulb scales in summer, or by stem bulbils (where present) in fall. Virus, fungal diseases, and lily beetle may cause problems. Lilies are classified into 9 divisions. They may also be further classified into subdivisions according to their flower aspect: **(a)** for upward-facing flowers; **(b)** outward-facing; **(c)** downward-facing. Also, they are classified according to flower form: **(a)** trumpet-shaped; **(b)** bowl-shaped; **(c)** predominantly flat (albeit sometimes with recurved petal tips); **(d)** turkscap. For example, 'African Queen' VIb-c/a is a Trumpet/Aurelian hybrid with flowers that are outward- to downward-facing and trumpet-shaped. See also feature panel pp.388–391.

Division I (Asiatic hybrids)
These lilies are derived from various Asiatic species, including *L. bulbiferum*, *L. cernuum*, *L. concolor*, *L. davidii*, *L. lancifolium* and *L. maculatum*. The flowers are borne in racemes or umbels, and are usually unscented. The leaves are narrowly ovate and arranged alternatively.
Division II (Martagon hybrids)
Derived primarily from *L. hansonii* and *L. martagon*, these lilies produce racemes of turkscap, sometimes scented flowers, and have whorls of elliptic leaves.
Division III (Euro-Caucasian hybrids)
Derived from *L. candicum* and other European species, except *L. martagon*, these lilies produce sometimes scented, mostly turkscap flowers, singly or in umbels or racemes. Leaves are elliptic, and spirally arranged or scattered.
Division IV (American hybrids)
Derived from American species, these lilies bear racemes of sometimes scented, mostly turkscap, but occasionally funnel-shaped flowers, and have whorls of lance-shaped to elliptic leaves.
Division V (Longiflorum hybrids)
Derived from *L. formosanum* and *L. longiflorum*, these lilies bear racemes or umbels of large, often sweetly scented, trumpet- or funnel-shaped flowers, in some only 2 or 3 per stem. The scattered leaves are linear to narrowly lance-shaped.
Division VI (Trumpet and Aurelian hybrids)
Derived from Asiatic species, including *L. regale*, *L. henryi* and *L. sargentiae*, these lilies bear racemes or umbels of usually scented flowers. Leaves are elliptic to linear, and alternate or spirally arranged.
Division VII (Oriental hybrids)
Derived from E. Asian species, such as *L. auratum*, *L. japonicum* and *L. speciosum*, as well as their hybrids with *L. henryi*, these lilies have flowers borne in racemes or panicles, and are often scented. Leaves are lance-shaped and alternate.
Division VIII (Other hybrids)
These include the many Interdivisional hybrids which have become increasingly popular in recent years, such as Longiflorum/Asiatic hybrids (LA) and Orienpet (Oriental/Trumpet) hybrids (OT).
Division IX All true species or their selected forms.

***L.* 'African Queen'** (illus. p.391). Mid- to late summer-flowering, vigorous Division VIb-c/a lily. H 5–6ft (1.5–2m). Bears 3 large fragrant flowers, brownish-purple outside and apricot-orange on the inside, with recurved petals. Z4–8
***L.* 'Altari'** (illus. p.388). Mid- to late summer-flowering, Division VIIIa-b/b (OT) lily. H 3–4ft (1–1.2m). Bears highly scented, white flowers with cranberry-red inner throats. Z4–8
L. amabile. Mid-summer-flowering Division IXc/d lily with stem roots. H 1–3ft (30–90cm). Scattered leaves are lance-shaped. Bears up to 10 unpleasant-

smelling, nodding, turkscap, black-spotted, red flowers; each petal is 2–2¼in (5–5.5cm) long. Z4–8

***L.* 'Amber Gold'.** Division Ic/d lily. H 4–5ft (1.2–1.5m). Bears medium-sized, nodding, turkscap, deep yellow flowers, each with maroon spots in throat in early and midsummer. Z4–8

***L.* 'Anastasia'.** Division VIIIb-c/b-c (OT) lily. H 4–6ft (1.2–1.9m). Produces flattish to slightly bowl-shaped, spicily scented, rose-pink to white flowers, with red-purple flares in late summer. Z5–9

***L.* 'Apollo'**. See *L.* 'Blizzard'.

***L.* 'Arena'** (illus. p.388). Vigorous, late-summer flowering Division VIIa/b lily. H 4ft (1.2m). Bears large, outward-facing, bowl-shaped to slightly trumpet-shaped, recurving, greenish- to yellowish-white flowers with deep red central veining on the insides, and yellow-green throats with deep red spots. Z4–8

L. auratum (Golden-rayed lily of Japan). Summer- and fall-flowering, Division IXb/c lily with stem roots. H 2–5ft (60cm–1.5m). Has long, scattered, lance-shaped leaves. Produces up to 10, sometimes more, fragrant, outward-facing, widely bowl-shaped, white flowers; each petal is 5–7in (12–18cm) long with a central, red or yellow band and often red or yellow spots. Requires partial shade and neutral to acid soil. Z4–8. **var. *platyphyllum*** (illus. p.388) has broader leaves; petals have a central, yellow band and fewer spots. ***L.* 'Black Beauty'.** Division VIIIb-c/d lily. H 4½–6ft (1.4–2m). Bears medium-sized, outward-facing, flattish, very deep red flowers with recurved, white-margined petals in midsummer. Z4–8

***L.* 'Black Dragon'.** See *L. leucanthemum* var. *centifolium* 'Black Dragon'.

***L.* 'Black Magic'** (illus. p.388). Division VIb/a lily. H 4–6ft (1.2–2m). In summer bears scented, outward-facing, trumpet-shaped flowers that are purplish-brown outside and white inside. Z4–8

***L.* 'Black Out'** (illus. p.389). Early to mid-summer-flowering Division Ib/b lily. H 4ft (1.2m). Glossy, dark red flowers have black-red throats, with tiny, black spots. Z4–8

***L.* 'Black Pearl'.** Early to midsummer-flowering Division Ia/b lily. H 3ft (1m). Bears deep purple-red flowers. Z4–8

***L.* 'Blizzard'**, syn. *L.* 'Apollo' (of Vletter en den Haan) (illus. p.391). Summer-flowering Division Ia/b lily. H 4ft (1.2m). Downward-facing, turkscap, pale orange flowers have strongly reflexed petals. Z5–9

***L.* 'Bonbini'** (illus. p.388). Division VIIIa-b/b (OT) lily. H 4–5ft (1.2–1.5m). Produces upward- to outward-facing, bowl-shaped, sweetly scented, milk-white flowers, with a broad, diamond-shaped, purple-margined flare at the base of each recurved petal. Z5–9

***L.* 'Bonfire'.** Late summer-flowering Division VIIb/b lily. H 4–5ft (1.2–1.5m). Produces outward-facing, bowl-shaped flowers with broad petals, white outside flushed with pink, and dark crimson inside, spotted paler crimson. Z5–9

***L.* 'Boogie Woogie'** (illus. p.390). Summer-flowering Division VIIIa-b/b lily. H 3ft (1m). Has large, fragrant flowers with recurved, pink-edged, yellow petals. Z5–9

***L.* 'Bright Star'** (illus. p.390). Summer-flowering Division VIb-c/c lily. H 3–5ft (1–1.5m). Bears large, flattish, white flowers; petals have recurved tips and a central, orange streak inside. Z5–9

***L.* 'Brocade'.** Early summer-flowering Division IIc/c lily. H 5ft (1.5m). Produces nodding, turkscap, orange-yellow flowers, suffused rosy-pink, with purple-red spots on the insides of the recurved petals. Z5–9

***L.* 'Brushmarks'.** Early summer-flowering Division Ia/b-c lily. H to 3ft (1m). Large, upward-facing, cup-shaped, orange flowers are green-throated. Petals have deep red blotches and sometimes spots. Z5–9

L. bulbiferum (Fire lily, Orange lily). Early to midsummer-flowering Division IXa/b lily with stem roots. H 16in–5ft (0.4–1.5m). Stems have scattered, lance-shaped leaves and, usually, bulbils in leaf axils. Bears 1–5 or more upward-facing, shallowly cup-shaped, orange-red flowers. Each petal is 2½–3¼in (6–8.5cm) long and spotted black or deep red. Z5–9. **var. *croceum*** (illus. p.391) has orange flowers and does not normally bear bulbils.

***L.* 'California Gold'.** Vigorous, summer-flowering, Division VIa lily. H 3–4ft (1–1.2m). Produces sprays of outward-facing, trumpet- to bowl-shaped, deep lemon-yellow flowers, with the reverses of the gently recurving petals bronze-green. Z5–9

L. canadense (Canada lily, Meadow lily, Wild yellow lily; illus. p.390). Mid- to late summer-flowering Division IXc/a lily with stem roots. H to 5½ft (1.6m). Narrowly to broadly lance-shaped leaves are mainly in whorls. Bears about 10 nodding, bell-shaped, yellow or red flowers; each petal is 2–3in (5–8cm) long, with dark red or purple spots in lower part. Z5–9

L. candidum (Madonna lily). Mid-summer-flowering Division IXb/a lily. H 1–1.8m (3–6ft). Flower stem bears scattered, lance-shaped leaves and 5–20 fragrant, outward-facing, broadly funnel-shaped, white flowers. Each petal is 2–3in (5–8cm) long with a yellow base and a slightly recurved tip. In fall, produces basal leaves, which remain throughout winter, but die off as flowering stems mature. Prefers lime-rich soil. Z5–9

***L. carniolicum*.** See *L. pyrenaicum* subsp. *carniolicum*.

***L.* 'Casa Blanca'** (illus. p.388). Late summer-flowering Division VIIb/b-c lily. H 3–4ft (1–1.2m). Large, waxy, white flowers have yellowish-white midribs and violet-red nectaries. Z5–9

L. cernuum (illus. p.389). Early to mid-summer-flowering Division IXc/d lily with stem roots. H to 2ft (60cm). Long, linear leaves are scattered on stems. Produces 7–15 fragrant, nodding, turkscap flowers, usually pinkish-purple with purple spots. Each petal is 1½–2in (3.5–5cm) long. Z5–9

L. chalcedonicum, syn. *L. heldreichii* (Scarlet turkscap lily; illus. p.391). Mid-summer-flowering Division IXb-c/d lily with stem roots. H 20in–5ft (0.5–1.5m). Leaves are scattered on stems and mostly lance-shaped, lower ones spreading, upper ones smaller and closer to stem. Bears up to 12 slightly scented, nodding, turkscap flowers with red or reddish-orange petals, each 2–3in (5–7cm) long. Z5–9

***L.* Citronella Group** (illus. p.390). Mid-summer-flowering Division Ic/d lily. H 1.2–1.5m (4–5ft). Bears nodding heads of large, scented flowers with recurved, black-spotted, bright yellow petals. Z5–9

***L.* 'Conca d'Or'** (illus. p.390). Mid-summer-flowering Division VIIIb/b (OT) lily. H 4–5ft (1.2–1.5m). Bears to 3 large, spicy-scented, creamy-yellow flowers with lemon-yellow throats. Z5–9

***L.* 'Connecticut King'** (illus. p.390). Early to midsummer-flowering Division Ia/b lily. H 3ft (1m). Flowers are medium-sized, upward-facing, cup-shaped, and bright yellow. Z5–9

***L.* 'Corsage'.** Summer-flowering Division Ia/b-c lily. H 4ft 1. (2m). Bears outward-facing, bowl-shaped flowers with recurved petals, pink-flushed outside and pink inside with white centers and maroon spots. Z5–9

***L.* 'Côte d'Azur'** (illus. p.389). Summer-flowering Division Ia/b-c lily. H 16in (40cm). Strong stems bear deep rose-pink flowers with darker-spotted throats. Z5–9

***L.* 'Crimson Pixie'** (illus. p.391). Early summer-flowering Division Ia/b lily. H 16in (40cm). Has umbels of upright, open bowl-shaped, unspotted, deep warm red-orange flowers. Good as a potted plant. Z5–9

***L.* x *dalhansonii*.** Variable, early summer-flowering Division IIc/d lily. H 3–6ft (1–1.5m). Bears unpleasant-smelling, turkscap flowers, chestnut brown or dark maroon with gold spots. Z5–9. **'Marhan'** (syn. *L.* 'Marhan') has nodding, turkscap, deep orange flowers, spotted red-brown.

L. davidii*.** Summer-flowering Division IXc/d lily with stem roots. H 3–4ft (1–1.2m). Linear leaves are scattered. Produces 5–20 nodding, turkscap, red or reddish-orange flowers; each petal is 5–8cm (2–3in) long with dark purple spots. Z5–9. **var. *willmottiae has slender, arching stems to 6ft (2m) and pendent flower stalks.

***L.* 'Destiny'.** Early summer-flowering Division Ia/b lily. H 3–4ft (1–1.2m). Flowers are medium-sized, upward-facing, cup-shaped and yellow with brown spots. Z5–9

***L.* 'Dimension'.** Midsummer flowering Division Ia/b-c lily. H 3–4½ft (1–1.4m). Bears up to 8 large, upward-facing, bowl-shaped, dark red (almost black) flowers. Z5–9

***L. duchartrei*.** Summer-flowering Division IXc/d lily. H 2–3ft (60–90cm). Lance-shaped leaves are scattered up the stems. Produces up to 12 fragrant, nodding, turkscap, white flowers, flushed purple outside and spotted deep purple inside. Z5–9

***L.* 'Elodie'** (illus. p.389). Summer-flowering Division Ia/b lily. H 4ft (1.2m). Semidouble, pale pink flowers have dark pink-freckled centers. Z5–9

***L.* 'Enchantment'** (illus. p.391). Early summer-flowering Division Ia/b lily. H 2–3ft (60–90cm). Produces medium-sized, upward-facing, cup-shaped, orange-red flowers with black-spotted throats. Z5–9

***L.* 'Eros'.** Midsummer-flowering Division Ic/d lily. H 3–3½ft (1–1.1m). Bears small, unscented, turkscap, buff flowers. Z5–9

***L.* 'Garden Party'.** Summer-flowering Division VIIb/b lily. H 20in (50cm). Large, fragrant, outward-facing, red-speckled, white flowers have gold and red or pink stripes in the center of each petal. Z5–9

***L.* Golden Clarion Group.** Late spring to early summer-flowering Division VIb/a bulb. H 3–6ft (1–2m). Produces outward-facing, trumpet-shaped, pale to deep yellow flowers that may be flushed with reddish-purple on the outside. Z5–9

***L.* 'Golden Joy'.** Midsummer-flowering Division Ia/c lily. H 1ft (30cm). Bears large, upward-facing, flattish, unscented, vivid yellow flowers in midsummer; each petal has a triangular, vivid orange flare at the base. Z5–9

***L.* Golden Splendor Group** illus. p.393.

***L.*'Grand Cru'** (illus. p.391). Early summer-flowering Division Ia/b lily. H 4ft (1.2m). Produces upright, open bowl-shaped, vivid-yellow flowers, strongly red-suffused in the throats for half the petal lengths, and with a few red spots at the base internally. Good as a pot plant. Z5–9

***L.* 'Gran Paradiso'** (illus. p.391). Mid-summer-flowering Division Ia/b lily. H 3ft (1m). Produces medium-sized, unscented, bowl-shaped, red flowers with slightly recurved petals. Z5–9

L. hansonii (illus. p.391). Early-summer-flowering Division IXb-c/d lily with stem roots. H 3–5ft (1–1.5m). Long, lance-shaped to ovate leaves are produced in whorls. Bears 3–12 scented, nodding, turkscap, orange-yellow flowers. Each thick petal is 1¼–1½in (3–4cm) long with brown-purple spots toward base. Z5–9

***L.* 'Harmony'.** Summer-flowering Division Ia-b/b lily. H 1½–3ft (45–90cm). Orange flowers are upward-facing, cup-shaped, and spotted with maroon. Z5–9

***L. heldreichii*.** See *L. chalcedonicum*.

L. henryi (illus. p.391). Late summer-flowering Division IXc/d lily with stem roots. H 3–10ft (1–3m). Has scattered, lance-shaped leaves. Produces 5–20, sometimes up to 70, nodding, turkscap, orange flowers; petals are 2½–3in (6–8cm) long with dark spots and prominent warts toward bases. Prefers lime-rich soil. Z5–9

***L.* Imperial Crimson Group.** See *L.* x *parkmanii* Imperial Crimson Group.

***L.* Imperial Gold Group.** See *L.* x *parkmanii* Imperial Gold Group.

***L.* 'Journey's End'.** See *L.* x *parkmanii* 'Journey's End'.

***L.* 'Karen North'** (illus. p.391). Mid-summer-flowering Division Ic/d lily. H to 4½ft (1.4m). Produces medium-sized, downward-facing turkscap flowers, with orange-pink petals, sparsely spotted with deep pink. Z5–9

***L.* 'Kushi Maya'.** Vigorous Division VIIIc/b-c lily. H 4½–5ft (1.3–1.5m). Produces downward-facing, bowl-shaped, strongly scented, green-tinged, white flowers, with a deep purplish red patch at the base of each petal and in the throats, in midsummer. Z5–9

***L.* 'Lady Bowes Lyon'** (illus. p.391). Summer-flowering Division Ic/d lily. H 3–4ft (1–1.2m). Produces downward-facing, black-spotted, red flowers with reflexed petals. Z5–9

L. lancifolium, syn. *L. tigrinum* (Tiger lily). Summer- to early fall-flowering, Division IXc/d lily with stem roots. H 2–5ft (0.6–1.5m). Has long, scattered, narrowly lance-shaped leaves. Produces 5–10, sometimes up to 40, nodding, turkscap, pink- to red-orange flowers; each petal is 3–4in (7–10cm) long and spotted with purple. Z5–9. **var. *flaviflorum*** has yellow flowers. Vigorous. **'Splendens'** (illus. p.391) bears larger, brighter red-orange flowers.

***L.* 'Landini'.** Division Ia/b lily. H 4½ft (1.3m). Strong stems bear up to 6 large,

upward-facing, bowl-shaped, dark red-black flowers in midsummer. Z5–9

L. lankongense (illus. p.389). Mid-summer-flowering Division IXc/d lily with stem roots. H 3–5ft (1–1.5m). Leaves are scattered and lance-shaped. Bears up to 15 scented, nodding, turkscap, pink flowers. Petals, each 1½–2½in (4–6.5cm) long with a central, green stripe and red-purple spots mainly on edges, are often mauve-flushed. Needs partial shade in warm areas. Z4–8

L. leichtlinii (illus. p.390). Summer-flowering Division IXc/d lily with stem roots. H to 4ft (1.2m). Scattered leaves are linear to narrowly lance-shaped. Bears 1–6 nodding, turkscap, yellow flowers; petals are 2½–3¼in (6–8.5cm) long with dark reddish-purple spots. Needs partial shade. Z4–8

***L. leucanthemum* var. *centifolium* 'Black Dragon'**, syn. *L.* 'Black Dragon'. Early summer-flowering Division 9b-c/a lily. H 5ft (1.5m). Bears large, outward-facing, trumpet-shaped flowers with dark purplish-red outsides and white insides. Z4–8

***L.* 'Lime Star'.** Vigorous, summer-flowering, Division VIIa/b lily. H 4ft (1.2m). Bears outward-facing, bowl-shaped to flat flowers, with recurving, white petals. Each petal is strongly banded bright greenish-yellow and has slightly ruffled margins. Z4–8

***L.* 'Lionheart'.** Mid-summer flowering Division Ia/c lily. H 4–5½ft (1.2–1.7m). Bears up to 6 medium-sized, upward-facing, flattish, vivid yellow flowers, so heavily spotted toward the bases as to appear almost black. Z5–9

***L.* Lollypop ('Holebibi')**. Early summer-flowering Division Ia/b lily. H 20–28in (50–70cm). Bears upright, open bowl-shaped, white flowers, with the upper parts of the gently recurving petals strongly suffused deep red. Z5–9

L. longiflorum (Bermuda lily, Easter lily, White trumpet lily; illus. p.388). Summer-flowering Division IXb/a lily with stem roots. H 1–3ft (30–90cm). Leaves are scattered and lance-shaped. Produces 1–6 fragrant, outward-facing, funnel-shaped, white flowers. Each petal is 5–8in (13–20cm) long with slightly recurved tips. Z9–11. **'White American'**, H 3ft (1m), is a Division 5 lily and produces white flowers with green tips and deep yellow anthers. Often grown for cutting. **'White Heaven'** (illus. p.388), H 4ft (1.2m), is a Division 5 lily with delicately scented, pure white flowers.

***L.* 'Luxor'.** Vigorous, summer-flowering, Division Ia/b lily. H 3–5ft (1–1.5m). Bears large, outward-facing, bowl-shaped, bright yellow flowers, slightly darker yellow and speckled with dark red spots on the lower half of each petal. Z5–9

L. mackliniae (Manipur lily; illus. p.389). Early to midsummer-flowering, Division IXb-c/a-b lily with stem roots. H 30–60cm (1–2ft). Has small, narrowly lance-shaped to narrowly ovate leaves, scattered or whorled near top of stem. Bears 1–6 usually nodding, broadly bell-shaped, purplish-pink flowers; each petal is 1¼–2in (4.5–5cm) long. Needs partial shade. Z5–9

L.* x *maculatum, syn. *L. thunbergianum*. Early and midsummer-flowering Division Ia/b lily with stem roots. H to 2ft (60cm). Scattered leaves are lance-shaped or ovate. Bears 1–6 upward-facing, cup-shaped, red, yellow, orange or flowers with darker spots; each petal is 3–4in (8–10cm) long. Z4–8

***L.* 'Magic Pink'.** Early summer-flowering Division VIIb/b lily. H 3–4ft (1–1.2m). Large flowers are pink with darker pink spots. Z4–8

***L.* 'Marhan'.** See *L.* x *dalhansonii* 'Marhan'.

L. martagon (Martagon lily; illus. p.389). Early and midsummer-flowering Division IXc/d lily with stem roots. H 3–6ft (1–2m). Has lance-shaped to ovate leaves in whorls and up to 50 scented, nodding, turkscap flowers. Petals are 1¼–1¾in (3–4.5cm) long and pink or purple, often with darker spots. Z4–8. **var. *album*** (illus. p.388) has pure white flowers.

L. medeoloides (illus. p.390). Mid-summer-flowering Division IXc/d lily. H to 2½ft (75cm). Has lance-shaped leaves and up to 10 turkscap, apricot to orange-red flowers, usually with darker spots. Z4–8

***L.* 'Miss Lucy'** (illus. p.389). Summer-flowering Division VIIa-b/b-c lily. H 4ft (1.2m). Produces highly fragrant, double, pinkish-white flowers with 18 petals. Z4–8

L. monadelphum, syn. *L. szovitsianum* (illus. p.390). Early summer-flowering Division IXc/d lily with stem roots. H 3–5ft (1–1.5m). Has scattered, lance-shaped to ovate leaves. Bears usually 1–5, sometimes up to 30, scented, nodding, turkscap, yellow flowers, usually with deep red or purple spots inside; petals are 2½–4in (6–10cm) long. Z5–9

***L.* 'Mona Lisa'** (illus. p.388). Summer-flowering Division VIIb/c lily. H 1½ft (45cm). Bears large, shallowly bowl-shaped to flat, light reddish-purple flowers, with ivory-white margins suffused red, greenish petal tips, dark red spots on the lower half of each petal and light green throats. Z5–9

***L.* 'Mont Blanc'.** Early to midsummer-flowering Division Ia/b-c lily. H 24–28in (60–70cm). Produces large, upward-facing, creamy-white flowers, spotted brown. Z5–9

***L.* 'Montreux'.** Midsummer-flowering Division Ia/b-c lily. H 32–36in (80–90cm). Bears about 8 medium-sized, pink flowers with darker pink midribs; orange-pink throats are spotted with brown. Z5–9

***L.* 'Muscadet'.** Summer-flowering Division VIIa-b/b lily. H 3ft (1m). Large, fragrant, white flowers have pink markings and maroon spots. Z5–9

L. nanum, syn. *Nomocharis nana*. Early summer-flowering Division IXc/b lily. H 2½–12in (6–30cm). Scattered leaves are linear. Bears a usually nodding, broadly bell-shaped, purplish-pink flower, with 1¾–2in (4.5–5cm) long petals. Needs partial shade. Z5–9. **var. *flavidum*** produces pale yellow flowers.

***L. nepalense*.** Early to midsummer-flowering Division IXc/a lily with stem roots. H 28–36in (70–90cm). Has scattered, lance-shaped leaves and often unpleasant-smelling, nodding, funnel-shaped, greenish-white or greenish-yellow flowers, each with a dark reddish-purple base inside and petals to 6in (15cm) long. Z9–11

***L.* 'Netty's Pride'** (illus. p.389). Summer-flowering Division Ia/b-c lily. H 2ft (60cm). Bears dark maroon flowers with ivory-tipped petals. Z5–9

***L.* 'New Wave'**. Early to midsummer-flowering Division Ia/b lily. H 2ft (60cm). Produces large, pure white flowers with scattered, maroon spots. Z5–9

***L.* 'Nymph'** (illus. p.388). Late summer-flowering Division VIIIa/b-d lily. H 3–6ft (1–2m). Produces large, scented, white flowers with deep pink stripes along the center of each petal. Z4–8

***L.* Olympic Group.** Vigorous, mid- to late summer-flowering, Division VIb-c/a lily. H 4–6ft (1.2–2m). Produces racemes of up to 15 large, sweetly scented, trumpet-shaped flowers ranging from white, greenish-white, cream, and yellow to pink and purple, often yellow in the throats. Petals are flushed pink or purplish-red on the outside. Z4–8

***L.* 'Orange Electric'** (illus. p.391). Summer-flowering Division Ia/b lily. H 4ft (1.2m). Produces white flowers with orange and yellow stripes in the center of the petals and brown spots. Z4–8

***L.* 'Orange Pixie'** (illus. p.391). Early summer-flowering Division Ia/b lily. H 10–12in (25–30cm). Bears upright umbels of open bowl-shaped, deep golden-orange flowers. Good as a container plant. Z4–8

L. pardalinum (Leopard lily, Panther lily; illus. p.391). Midsummer-flowering Division IXc/d lily. H 5–8ft (1.5–2.5m). Long, narrowly elliptic leaves are mainly in whorls. Produces up to 10 often scented, nodding, turkscap flowers. Each petal is 2–3½in (5–9cm) long with red upper parts. Orange lower parts have maroon spots, some of which are encircled with yellow. H6. **subsp**. ***wigginsii*** (syn. *L. wigginsii*; illus. p.390) has hairless stems and leaves that are scattered or in 2–4 whorls roughly halfway up the stems. Produces few-flowered racemes of unscented, pendent, turkscap, deep yellow flowers, with purple spots. Needs moist acid soil, and partial or dappled shade; can be stem-rooting.

***L.* x *parkmanii* Imperial Crimson Group**, syn. *L.* Imperial Crimson Group. Late summer-flowering Division VIIb/c lilies. H 5ft (1.5m). Large, fragrant, flattish, deep crimson flowers have white throats and white-margined petals. Z5–9.

Imperial Gold Group (syn. *L.* Imperial Gold Group) bear large, fragrant, flattish, white flowers, spotted maroon, and with a yellow stripe up each petal center.

'Journey's End' (syn. *L.* 'Journey's End'; illus. p.389) bears bowl-shaped, maroon-spotted, deep pink flowers with recurved petals, white at tips and edges.

***L.* 'Pearl Carolina'.** Vigorous Division Ic/c lily. H 4½ft (1.3m). with strong stems. Bears up to 6 large, long-lasting, downward-facing, flattish, vivid reddish orange flowers in midsummer. Z5–9

***L.* Pink Perfection Group**. Mid-summer-flowering Division VIb/a lily with stout stems. H 5–6ft (1.5–2m). Bears large, scented, slightly nodding Ia/b, trumpet-shaped flowers, which are deep purplish-red or purple-pink, with bright orange anthers. Z5–9

L. pomponium (illus. p.391). Slender, stem-rooting, early to midsummer-flowering, Division IXc/d lily. H 1m (3ft). Has green stems that are spotted purple on the lower halves. Scattered, linear, mid-green leaves have silver-hairy margins. Bears racemes of up to 6 (rarely up to 10) pungently scented, pendent, turkscap, sealing-wax-red flowers, with black spots and streaks in the throats. Alkaline soil in full sun or partial shade. Z5–9

***L. ponticum*.** See *L. pyrenaicum* subsp. *ponticum*.

L. pumilum, syn. *L. tenuifolium*. Early summer-flowering Division IXc/d lily with stem roots. H 6–18in (15–45cm). Small, scattered leaves are linear. Produces usually up to 7 but occasionally up to 30 slightly scented, nodding, turkscap flowers; each petal is 1¼–1½in (3–3.5cm) long and scarlet with or without basal, black spots. Z4–8

L. pyrenaicum (Yellow turkscap lily; illus. p.390). Early to midsummer-flowering, Division IXc/d lily, often with stem roots. H 1–3ft (30–90cm). Has scattered, linear to narrowly elliptic, hairless leaves. Produces up to 12 unpleasant-smelling, nodding, turkscap flowers. Each petal is 1½–2½in (4–6.5cm) long and yellow or green-yellow with prominent dark purple spots and lines. Z5–9. **subsp. *carniolicum*** (syn. *L. carniolicum*) has red- or orange-spotted flowers. Leaves may be hairless or downy. **subsp. *ponticum*** (syn. *L. ponticum*) bears deep yellow flowers, densely lined and spotted with red-brown or purple; leaves are downy beneath. **subsp. *pyrenaicum* f. *rubrum*** (illus. p.391) has orange-red or dark red flowers.

***L.* 'Red Carpet'** (illus. p.391). Early summer-flowering Division Ia/b lily. H 1ft (30cm). Has upright umbels of open bowl-shaped, unspotted, deep red flowers. Good as a potted plant. Z5–9

L. regale (Regal lily; illus. p.388).Vigorous, midsummer-flowering Division IXb/a lily with stem roots. H 20in–6ft (0.5–2m). Linear leaves are scattered. Produces up to 25 fragrant, outward-facing, funnel-shaped flowers. Petals are each 5–6in (12–15cm) long, white inside with a yellow base and pinkish-purple outside. Z5–9. **'Royal Gold'** (syn. *L.* 'Royal Gold'; illus. p.390), H 4–5ft (1.2–1.5m), bears large, outward-facing, trumpet-shaped flowers, mid-yellow inside and purple-brown outside.

***L.* 'Roma'** (illus. p.390). Early summer-flowering Division Ia/b lily. H 5ft (1.5m). Green buds open to cream flowers that sometimes age to pale greenish-yellow. Z5–9

***L.* Roselily Isabella ('DL044033').** Midsummer-flowering Division VIIa-b/- lily. H 3ft (1m). Bears large, double, stamen-free flowers with recurved deep pink petals, suffused purplish pink with dark red spots in the center, and fading to white, slightly ruffled margins. Z5–9

L. rosthornii (illus. p.390). Vigorous, stem-rooting, clump-forming, summer-flowering, Division IXc/d lily. H 16–39in (40–100cm). Has long, scattered, lance-shaped leaves on the lower part of the stem, the upper stem leaves being much shorter and ovate in shape. Bears up to 9 nodding, turkscap, orange or orange-yellow flowers. Strongly recurved, channeled petals have green central bands and purple-red basal spots. Z5–9

***L.* 'Royal Gold'.** See *L. regale* 'Royal Gold'.

L. rubellum (illus. p.389). Early summer-flowering Division IXb/a lily with stem roots. H 12–32in (30–80cm). Has scattered, narrowly ovate leaves and up to 9 scented, outward-facing, broadly funnel-shaped, pink flowers with dark red spots at bases; each petal is 2½–3in (6–8cm) long. Z5–9

***L.* 'Shuksan'.** Mid-summer-flowering Division IVc/d lily. H 4½–6ft (1.4–2m).

Medium-sized, nodding, turkscap, yellowish-orange flowers are flushed red at petal tips and sparsely spotted black. Z5–9
***L.* 'Sixth Sense'.** Summer-flowering Division VIIa/b-c lily. H 28in (70cm). Bears white-edged, dark burgundy-red flowers with dark purple-brown spots. Z5–9
L. speciosum. Late summer-flowering Division IXb-c/d lily with stem roots. H 3–5½ft (1–1.7m). Has long, scattered, broadly lance-shaped leaves. Produces up to 12 scented, nodding, turkscap, white or pink flowers; each petal is up to 4in (10cm) long, with pink or crimson spots. Requires neutral to acid soil. Z5–9. **var. *album*** has white flowers and purple stems. Flowers of **var. *rubrum*** are carmine, stems are purple.
***L.* 'Starfighter'** (illus. p.389). Summer-flowering Division VIIa-b/c lily. H 20in (50cm). Bears spicy-scented, maroon-speckled, deep pinkish-purple flowers with prominent white-edges. Z5–9
***L.* 'Star Gazer'.** Late summer-flowering Division VIIa/c lily. H 3–5ft (1–1.5cm). Large, highly fragrant, rich crimson flowers are spotted maroon, with white edges. Z5–9
***L.* 'Sterling Star'** (illus. p.388). Early to midsummer-flowering Division 1a lily. H 1–1.2m (3–4ft). Produces large, upward-facing, cup-shaped, white flowers with tiny, brown spots. Z5–9
***L.* 'Sunny Crown'.** Summer-flowering Division VIIIa/b (OT) lily. H 4–4½ft (1.2–1.3m). Bears large, upward-facing, bowl-shaped, lightly scented, pale yellow-green flowers, with a prominent, deep red mark in the basal half of each petal. Z5–9
***L.* 'Sumatra'** (illus. p.389). Mid- to late summer-flowering Division VIIb/b lily. H 3–3½ft (1–1.1m). Produces large, scented, dark wine-red flowers with a hint of white at the tips of the petals. Z5–9
L. superbum (Swamp lily, Turkscap lily; illus. p.390). Late summer- to early fall-flowering, Division IXc/d lily with stem roots. H 5–10ft (1.5–3m). Lance-shaped to elliptic leaves are mainly in whorls. Bears up to 40 nodding, turkscap, orange flowers. Each petal is 6–10cm (2½–4in) long, with a green base inside and usually flushed red and spotted maroon. Requires neutral to acid soil. z4–8
***L.* 'Sweet Lord'** (illus. p.389). Early to midsummer-flowering Division Ia/b lily. H 20in (50cm). Produces purple-red flowers. Z5–9
L. szovitsianum. See *L. monadelphum.*
L. tenuifolium. See *L. pumilum.*
L.* × *testaceum (Nankeen lily). Early to midsummer-flowering Division IIIc/d lily. H 3–5ft (1–1.5m). Has scattered, linear, often twisted leaves. Bears 6–12 fragrant, nodding, turkscap, light orange to brownish-yellow flowers; each petal is 3in (8cm) long, usually with reddish spots inside. Z5–9
L. thunbergianum. See *L. maculatum.*
***L.* 'Tigerwoods'** (illus. p.389). Summer-flowering Division VIIa/c lily. H 3ft (1m). Bears very large, scented, white flowers with a rich crimson stripe down the center of each petal surrounded by crimson spots. Z5–9
L. tigrinum. See *L. lancifolium.*
***L.* 'Tom Pouce'** (illus. p.389). Mid-summer-flowering Division VIIa/b lily. H 3ft (1m). Produces large, highly scented, pink flowers, with a pale yellow stripe down the center of each petal and pale yellow freckles. Z5–9
***L.* Triumphator ('Zanlophator')** (illus. p.388). Summer-flowering Division VIIIb/a-b LO lily. H 3ft (1m). Produces large, fragrant, outward-facing, white flowers with rich rose-pink centers. Z5–9
L. tsingtauense (illus. p.391). Mid-summer-flowering Division IXa/c lily with stem roots. H 28–36in (70–90cm). Lance-shaped leaves are mainly in whorls. Bears 1–5 upward-facing, cup-shaped, orange to orange-red flowers; petals are up to 5cm (2in) long and spotted with maroon. Z5–9
***L.* 'Venezuela'** (illus. p.388). Late summer to early fall-flowering Division VIIa/b lily. H 3–3½ft (1–1.1m). Has large, upward-facing, bowl-shaped, pure white flowers, with a brilliant yellow flare on each ruffled petal, and a dusting of yellow spots. Z5–9
L. wallichianum. Late summer- to fall-flowering, Division IXb/a lily with stem roots. H 3–6ft (1–2m). Long, scattered leaves are linear or lance-shaped. Bears 1–4 fragrant, outward-facing, funnel-shaped, white or cream flowers that are green or yellow toward bases. Each petal is 6–12in (15–30cm) long. Z9–11
***L.* 'White Heaven'** (illus. p.388).
L. wigginsii. See *L. pardalinum* var. *wigginsii.*
***L.* 'Zanlophator'.** See *L.* Triumphator ('Zanlophator').

Limnanthemum nymphoides. See *Nymphoides peltata.*
Limnanthemum peltatum. See *Nymphoides peltata.*

LIMNANTHES

LIMNANTHACEAE

Genus of annuals, useful for rock gardens, containers, and for edging borders; *L. douglasii* is the only species usually cultivated. Fully hardy. Prefers a sunny situation and fertile, well-drained soil. Propagate by seed sown outdoors in spring or early fall. Self seeds very freely, although easy to control.
L. douglasii (Meadow foam, Poached-egg flower) illus. p.321.

LIMONIUM

Sea lavender, Statice

PLUMBAGINACEAE

Genus of summer- and fall-flowering perennials, sometimes grown as annuals, and subshrubs, some of which are evergreen. Fully hardy to frost tender. Grows in full sun and in well-drained soil. Propagate by division in spring, by seed in fall or early spring, or by root cuttings in winter.
L. bellidifolium, syn. *L. reticulatum, Statice bellidifolia.* Evergreen, dome-shaped perennial with a woody base. H and S to 6in (15cm). Has basal rosettes of rounded, dark green leaves. Much-branched flower stems produce abundant, small, "everlasting," trumpet-shaped pale violet or blue-violet flowers in summer–fall. Excellent for a rock garden. Z8–10
***L. latifolium* 'Blue Cloud'.** See *L. platyphyllum* 'Blue Cloud'.
L. perezii. Evergreen, rounded subshrub. H and S 3ft (1m) or more. Has long-stalked, ovate to diamond-shaped, deep green leaves. Dense clusters, 8in (20cm) across, of tiny, tubular, deep mauve-blue flowers are borne well above the leaves in fall. Needs good ventilation if grown under glass. H2 (min. 45°F/7°C).
***L. platyphyllum* 'Blue Cloud'**, syn. *L. latifolium* 'Blue Cloud'. Clump-forming perennial. H 2ft (60cm), S 1½ft (45cm). In late summer, bears diffuse clusters of bluish-mauve flowers that can be dried for indoor decoration. Has large, leathery, dark green leaves. Z4–9
L. reticulatum. See *L. bellidifolium.*
L. sinuatum (Statice). Fairly slow-growing, bushy, upright perennial, grown as an annual. H to 16in (40cm), S 1ft (30cm). Has lance-shaped, lobed, deep green leaves and, in summer and early fall, tiny, blue, pink, or white flowers borne in clusters on winged stems. Z9–11. **Fortress Series** have small, tubular flowers in a mixture of shades such as pink, yellow, or blue. The leaves are often wavy-margined.
L. suworowii. See *Psylliostachys suworowii.*

LINARIA

Toadflax

PLANTAGINACEAE

Genus of spring-, summer- or fall-flowering annuals, biennials and perennials, grown for their flowers, which resemble snapdragons (*Antirrhinum*). Good for rock gardens and borders. Fully to half hardy. Prefers sun or light shade; thrives in any well-drained soil. Propagate by seed in fall or spring. Self seeds freely.
L. alpina (Alpine toadflax). Trailing, short-lived perennial. H 3in (8cm), S to 6in (15cm). Has whorls of linear to lance-shaped, fleshy, gray-green leaves. Bears a succession of snapdragonlike, yellow-centered, purple-violet flowers in loose racemes in summer. Z4–9
L. dalmatica, syn. *L. genistifolia* subsp. *dalmatica* (Dalmatian toadflax). Upright, branching perennial. H to 4ft (1.2m), S 2ft (60cm). Has alternate, ovate to lance-shaped, glaucous green leaves. Bears loose racemes of golden-yellow flowers from early to late summer. Z5–9
L. genistifolia. Upright perennial. H 3ft (1m), S 2ft (60cm). From midsummer to fall, produces racemes of small, snapdragonlike, orange-marked, yellow flowers. Lance-shaped, glossy, mid-green leaves clasp the stems. Z5–9. **subsp. *dalmatica*** see *L. dalmatica*.
***L. maroccana* 'Fairy Bouquet'.** Fast-growing, erect, bushy annual. H to 9in (23cm), S 6in (15cm). Has lance-shaped, pale green leaves. In summer, freely bears small, snapdragonlike flowers in shades of yellow, rose-pink, salmon-pink, orange, carmine, lavender, or white. Z6–11.
L. purpurea (Purple toadflax). Upright perennial. H to 3ft (90cm), S 1ft (30cm). From mid- to late summer, racemes of snapdragonlike, purplish-blue flowers, touched with white at throats, are borne above narrowly ovate, gray-green leaves. Z5–9. **'Canon J. Went'** illus. p.232.
L. triornithophora (Three birds toadflax) illus. p.239.

LINDERA

LAURACEAE

Genus of deciduous or evergreen shrubs and trees, grown for their foliage, which is often aromatic, and their fall color. Fruits are produced on female plants if male plants are also grown. Fully hardy to frost tender. Needs partial shade and moist, acid soil. Propagate by softwood cuttings in summer or by seed in fall.
L. benzoin (Benjamin, Spice bush) illus. p.127.
L. obtusiloba. Deciduous, bushy shrub. H and S 20ft (6m). Bears 3-lobed, aromatic, glossy, dark green leaves, becoming butter-yellow in fall. Clusters of small, star-shaped, deep yellow flowers, borne on bare shoots from early to mid-spring, are followed by small, spherical, black fruits. Z6–9

LINDHEIMERA

ASTERACEAE/COMPOSITAE

Genus of late summer- and early fall-flowering annuals. Fully hardy. Grow in sun and in fertile, well-drained soil. Propagate by seed sown under glass in early spring or outdoors in late spring.
L. texana (Star daisy). Moderately fast-growing, erect, branching annual. H 1–2ft (30–60cm), S 1ft (30cm). Has hairy stems and ovate, serrated, hairy leaves. Daisylike, yellow flower heads are borne in late summer and early fall. Z8–11

LINNAEA

Twin flower

CAPRIFOLIACEAE

Genus of one species of evergreen, prostrate, summer-flowering shrub that forms an extensive, twiggy mat. Useful as groundcover on rock gardens and peat beds. Fully hardy. Requires partial shade and moist, peaty, acid soil. Propagate by rooted runners in spring, by softwood cuttings in summer, or by seed in fall.
L. borealis illus. p.363.

LINUM

LINACEAE

Genus of annuals, biennials, perennials, subshrubs, and shrubs, some of which are evergreen or semievergreen, grown for their flowers. Suitable for rock gardens. Fully to frost hardy, but in cold areas some species need a sheltered position. Prefers sun and humus-rich, well-drained, peaty soil. Propagate subshrubs and shrubs by semiripe cuttings in summer or by seed in fall, annuals, biennials, and perennials by seed in fall.
L. arboreum illus. p.344.
L. flavum (Golden flax, Yellow flax). Bushy perennial with a woody rootstock. H 12in (30cm), S to 8in (20cm). Has narrowly ovate, green leaves and, in summer, upward-facing, funnel-shaped, yellow flowers in terminal clusters. Z4–8. **'Compactum'** illus. p.372.
***L.* 'Gemmell's Hybrid'.** Semievergreen, domed perennial with a woody rootstock. H 6in (15cm), S 8in (20cm). Leaves are ovate and gray-green. In summer, short-stalked, broadly funnel-shaped, bright

chrome-yellow flowers are produced in terminal clusters. Prefers alkaline soil. Z5–8
***L. grandiflorum* 'Rubrum'** illus. p.308.
L. narbonense. Clump-forming, short-lived perennial, best renewed frequently from seed. H 1–2ft (30–60cm), S 1½ft (45cm). Has lance-shaped, grayish-green leaves and heads of cup-shaped, pale to deep blue flowers in spring-summer. Z5–8
L. perenne illus. p.342.
L. salsoloides. See *L. suffruticosum* subsp. *salsoloides*.
L. suffruticosum* subsp. *salsoloides, syn. *L. salsoloides*. Perennial with spreading, sometimes woody-based, stems. H 4in (10cm), S to 6in (15cm). Slender stems produce fine, heathlike, gray-green leaves and, in summer, a succession of short-lived, saucer-shaped, pearl-white flowers, flushed blue or pink, in terminal clusters. Z5–8

Lippia citriodora. See *Aloysia triphylla*.

LIQUIDAMBAR

HAMAMELIDACEAE

Genus of deciduous trees, grown for their maplelike foliage and fall color; flowers are inconspicuous. Fully hardy. Needs sun or partial shade and fertile, moist but well-drained soil; grows poorly on shallow, chalky soil. Propagate by softwood cuttings in summer or seed in fall.
***L. acalycina* 'Burgundy Flush'.** Deciduous, broadly conical tree. H 50ft (15m), S 30ft (10m). Has large, 3-lobed, toothed leaves, flushed burgundy-red when young, gradually fading to dark green. Z6–9
L. orientalis (Oriental sweet gum). Slow-growing, deciduous, bushy tree. H 20ft (6m), S 12ft (4m). Small, 5-lobed, mid-green leaves turn vivid orange in fall. Z4–9
L. styraciflua (Sweet gum) illus. p.65.
'Lane Roberts' is a deciduous, broadly conical to spreading tree. H 80ft (25m), S 40ft (12m). Shoots usually have corky ridges. Glossy, green leaves, each with 5 lobes, turn deep reddish-purple in fall.
'Slender Silhouette', H 50–70ft (15–20m), is a narrowly columnar form with lustrous, dark green leaves, turning yellow and orange-red in fall.
'Worplesdon' has deeply lobed leaves, turning purple then orange-yellow in fall. Z6–10

LIRIODENDRON

MAGNOLIACEAE

Genus of deciduous trees, grown for their foliage and flowers. The flowers are almost hidden by the unusual leaves and are not produced on young trees. Fully hardy. Needs sun or partial shade and deep, fertile, well-drained, preferably slightly acid, soil. Propagate species from seed in fall and selected forms by budding in late summer.
L. chinense (Chinese tulip tree). Fast-growing, deciduous, spreading tree. H 80ft (25m), S 40ft (12m). Bears large, deep green leaves, cut off at the tips and with a deep lobe on each side; leaves become yellow in fall. Bears cup-shaped, orange-based, greenish-white flowers in midsummer. Z7–10
L. tulipifera (Tulip tree) illus. p.60.
'Aureomarginatum' illus. p.65.

LIRIOPE

Lilyturf

ASPARAGACEAE

Genus of evergreen and semievergreen perennials with swollen, fleshy rhizomes. Some are grown as groundcover. Fully hardy to frost tender. Requires sun and well-drained soil. Propagate by division in spring or by seed in fall.
L. graminifolia* var. *densiflora. See *L. muscari*.
L. muscari, syn. *L. graminifolia* var. *densiflora*, *L. platyphylla,* illus. p.280.
'Majestic' is an evergreen, spreading, rhizomatous perennial. H 1ft (30cm), S 45cm (1½ft). Has linear, glossy, green leaves and spikes of thickly clustered, rounded-bell-shaped, violet flowers in late fall. Z6–10
L. platyphylla. See *L. muscari*.
L. spicata. Evergreen, spreading, rhizomatous perennial. H 10in (25cm), S 18in (45cm). Grasslike, glossy, dark green leaves provide good groundcover. Bears spikes of rounded-bell-shaped, pale violet to white flowers in late summer. Z7–10

Lisianthus. See *Eustoma*.

LITHODORA

BORAGINACEAE

Genus of evergreen subshrubs and shrubs, grown for their flowers. Excellent in rock gardens. Fully to frost hardy. Needs full sun and moist, well-drained soil; some hate limestone and need acid soil. Resents root disturbance. Propagate by semiripe cuttings in midsummer or seed in fall.
***L. diffusa* 'Grace Ward'**, syn. *Lithospermum diffusum.* Evergreen, compact, semiprostrate shrub. H 6in (15cm), S to 2ft (60cm). Trailing stems bear lance-shaped, hairy, dull green leaves. In early summer, bears terminal clusters of funnel-shaped, deep blue flowers. Needs acid soil. Trim back after flowering. Z6–8.
'Heavenly Blue' illus. p.343.
L. oleifolia, syn. *Lithospermum oleifolium*, illus. p.342.
L. zahnii, syn. *Lithospermum zahnii.* Evergreen, much-branched, upright shrub. H 12in (30cm), S 16in (40cm) or more. Has ovate, hairy, dark green or grayish-green leaves. Funnel-shaped, azure-blue flowers, with spreading lobes, open in succession from early spring to midsummer. Sets buds and flowers intermittently until mid-fall. Prefers alkaline soil. Z8–10

LITHOPHRAGMA

SAXIFRAGACEAE

Genus of tuberous perennials, grown for their campionlike flowers. Dormant in summer. Fully hardy. Tolerates all but deepest shade and prefers humus-rich, moist soil. Propagate by seed or division in spring or fall.
L. parviflorum illus. p.332.

LITHOPS

Living stones, Stone plant

AIZOACEAE

Genus of prostrate, egg-shaped, perennial succulents, with almost united pairs of swollen, erect leaves that are separated on upper surface by a fissure from which a daisylike flower emerges. Each pair of old leaves splits and dries away to papery skin in spring to reveal a pair of new leaves growing at right angles to old ones. Slowly forms clumps after 3–5 years. Frost tender. Needs full sun and extremely well-drained soil or gritty compost. Water regularly in growing season (midsummer to early fall), not at all in winter. Propagate by seed in spring or summer.
L. aucampiae. Egg-shaped, perennial succulent. H 1¼in (3cm), S to 4in (10cm). Pairs of brown leaves have flat, upper surfaces bearing darker marks. Produces a yellow flower in late summer or early fall. Z10–11 (min. 41°F/5°C)
L. bella. See *L. karasmontana* subsp. *bella*.
L. bromfieldii. Egg-shaped, perennial succulent. H ⅝in (1.5cm), S 1¼–3in (3–8cm). Slightly convex, upper surfaces of paired, brown leaves have dark green windows and red dots and lines. Produces a yellow flower in late summer or early fall. Z10–11 (min. 41°F/5°C)
L. dorotheae illus. p.491.
L. fulleri. Egg-shaped, perennial succulent. H and S ¾in (2cm). Paired leaves are dove-gray to brown-yellow. Convex, upper surfaces have sunken, darker marks. In late summer or early fall, bears a white flower. Z10–11 (min. 41°F/5°C)
L. hookeri, syn. *L. turbiniformis*. Egg-shaped, perennial succulent. H 1in (2.5cm), S to 6in (15cm) or more. Has a flattish, upper surface with, usually, sunken, dark brown marks on paired, brown leaves. Bears a yellow flower in late summer or early fall. Z10–11 (min. 41°F/5°C)
L. julii. Egg-shaped, perennial succulent. H 1¼in (3cm), S indefinite. Has paired, pearl- to pink-gray leaves, each with a slightly convex, darker-marked, upper surface. In late summer or early fall, bears a white flower. Z10–11 (min. 41°F/5°C)
L. karasmontana illus. p.481. **subsp. *bella***, syn. *L. bella*, is an egg-shaped, perennial succulent. H to 1½in (4cm), S indefinite. Has pairs of brown to brown-yellow leaves with darker marks on convex, upper surfaces. Bears a white flower in late summer or early fall. Z10–11 (min. 41°F/5°C)
L. lesliei. Egg-shaped, perennial succulent. H ⅝in (1.5cm), S to 1½in (4cm). Pairs of gray-green to buff to pale terra-cotta leaves have convex upper surfaces with an olive green panel and transparent dots. Produces a yellow flower in late summer or early fall. Z10–11 (min. 41°F/5°C). **var. *albinica*** illus. p.491.
L. marmorata illus. p.489.
L. olivacea. Egg-shaped, perennial succulent. H and S ¾in (2cm). Paired, dark olive-green leaves have darker windows on convex, upper surfaces. Produces a yellow flower in late summer or early fall. Z10–11 (min. 41°F/5°C)
L. otzeniana. Egg-shaped, perennial succulent. H 1¼in (3cm), S indefinite. Paired, gray-violet leaves each have a convex, upper surface with a light border and large, semitranslucent windows. In late summer or early fall, bears a yellow flower. Z10–11 (min. 41°F/5°C)
L. pseudotruncatella. Egg-shaped, perennial succulent. H and S to 1¼in (3cm). Has pairs of pale gray or blue to lilac leaves with darker marks on convex, upper surfaces. Fissure reaches from side to side only on mature plants. In late summer or early fall, bears a yellow flower. Z10–11 (min. 41°F/5°C). **subsp. *dendritica*** illus. p.495.
L. schwantesii illus. p.495.
L. turbiniformis. *See L. hookeri.*

Lithospermum diffusum. See *Lithodora diffusa* 'Grace Ward'.
Lithospermum oleifolium. See *Lithodora oleifolia*.
Lithospermum zahnii. See *Lithodora zahnii*.
Litsia glauca. See *Neolitsia sericea*.
Littonia modesta. See *Gloriosa modesta*.

LIVISTONA

ARECACEAE/PALMAE

Genus of evergreen palms, grown for their overall appearance. Bears clusters of insignificant flowers in summer. Frost tender. Needs full light or partial shade and fertile, well-drained soil, ideally neutral to acid. Water potted specimens moderately, less in winter. Propagate by seed in spring at not less than 73°F (23°C). Red spider mite may be a nuisance on containerized plants.
L. australis (Australian cabbage palm, Gippsland fountain palm). Slow-growing, evergreen palm with a fairly slender trunk. H to 80ft (25m), S to 15ft (5m). Has fan-shaped leaves, 4–8ft (1.2–2.5m) wide, divided into narrow, slender-pointed, glossy, green leaflets. Leaf stalks are spiny. Z10–11 (min. 41°F/5°C)
L. chinensis (Chinese fan palm, Chinese fountain palm) illus. p.451.

LLOYDIA

LILIACEAE

Genus of summer-flowering bulbs, grown for their small, graceful, bell-shaped flowers. Fully hardy. Not easy to grow. Requires partial shade and well-drained, peaty soil; provide plenty of moisture in summer but, preferably, keep fairly dry in winter. Propagate by seed in spring.
L. graeca. See *Gagea graeca*.
L. serotina. Early summer-flowering bulb. H 2–6in (5–15cm), S 1–2in (2.5–5cm). Wiry stems bear scattered, threadlike, semierect leaves near stem base. Produces 1 or 2 bell-shaped, white flowers, ½–⅝in (1–1.5cm) long, with purple or purple-red veins. Z5–9

LOBELIA

CAMPANULACEAE

Genus of annuals, perennials, and deciduous or evergreen shrubs, grown for their attractive flowers. Some are suitable for wild gardens or by water. Fully hardy to frost tender. Prefers sun and moist but well-drained soil. Resents wet conditions in winter; in cold areas some perennials and shrubs are therefore best lifted in fall and placed in well-drained compost in frames. Propagate annuals by seed in spring, perennial species by seed or division in spring, perennial cultivars by division only, and shrubs by semiripe

cuttings in summer. ⓘ Contact with the milky sap of some species may irritate skin.
L. angulata. See *Pratia angulata*.
L. cardinalis, syn. *L. fulgens*, *L. splendens* (Cardinal flower), illus. p.439. **'Bees Flame'** is a short-lived, clump-forming perennial. H 30in (75cm), S 9in (23cm). Has narrowly lance-shaped, fresh green leaves and 2-lipped, bright crimson flowers in mid- and late summer.
'Queen Victoria' illus. p.248. Z4–9
***L. erinus* cultivars.** Low-growing, bushy or trailing perennials, grown as annuals. H 4–9in (10–23cm), S 4–6in (10–15cm). Tiny ovate to lance-shaped, toothed leaves are mid- to dark green, or bronze-flushed. From summer to fall, bears small loose racemes of small tubular, 2-lipped, blue, violet, white, pink, red, or purple flowers, with white or yellow eyes and broad, fan-shaped, lower lips. Z10–11.
'Cambridge Blue', H 4in (10cm), is compact and has blue flowers. **Cascade Series**, H 6in (15cm), are trailing, with carmine-red, violet-blue, blue, pink or white flowers. **'Crystal Palace'** illus. p.315. **Fountain Series**, H 6–8in (15–20cm), S 10–12in (25–30cm), are trailing, with white, rose-pink, blue, or crimson flowers. **'Lilac Fountain'** illus. p. 312. **Regatta Series**, H to 8in (20cm), are trailing, bloom early, and bear blue, pink, crimson, or white flowers over a very long season. **Riviera Series**, H 4–6in (10–15cm), bear very early flowers in lilac-blue, sky-blue, or mottled blue with picotee margins. **'Sapphire'** illus. p.314.
L. ferruginea. See *Centropogon ferrugineus*.
L. fulgens. See *L. cardinalis*.
***L.* x *gerardii* 'Vedrariensis'.** See *L.* x *speciosa* 'Vedrariensis'.
L. oligophylla. See *Hypsela reniformis*.
L. pedunculata. See *Pratia pedunculata*.
L. siphilitica illus. p.441.
***L.* x *speciosa* 'Dark Crusader'.** Clump-forming perennial. H 3ft (1m), S 1ft (30cm). From mid- to late summer, bears racemes of 2-lipped, dark red flowers above lance-shaped, fresh green or red-bronze leaves. Z5–8. **Fan Series**, H 20–24in (50–60cm), S to 9in (23cm), have bronze-green or dark green leaves and compact, dense racemes, branching at the bases, of narrow-petalled flowers in pink, deep carmine-pink, scarlet, or deep red. **Fan Series 'Fan Scharlach'** is a selection with bright scarlet flowers. **Kompliment Series**, H 30in (75cm) or more, S to 9in (23cm), have dark green leaves and long-stemmed, loose racemes of scarlet, deep red, or blue-purple flowers. **Kompliment Series 'Kompliment Scharlach'** has large, bright scarlet flowers on unbranched racemes. **'Vedrariensis'** (syn. *L.* x *gerardii* 'Vedrariensis', *L.* 'Vedrariensis') has dark green leaves, often suffused red, and many-flowered racemes of violet-purple flowers. **'Will Scarlet'** (syn. *L.*'Will Scarlet'), H 3ft (90cm), S 1ft (30cm), has mid-green leaves suffused maroon and racemes of bright blood-red flowers from midsummer to early fall.
L. splendens. See *L. cardinalis*.
L. tupa. Clump-forming perennial. H 5–6ft (1.5–2m), S 3ft (1m). Bears large spikes of 2-lipped, vivid brick-red flowers in late summer, above narrowly ovate, hairy, light green leaves. Performs best in a sheltered, sunny site with well-drained soil. Z5–8
***L.* 'Vedrariensis'.** See *L.* x *speciosa* 'Vedrariensis'.
***L.* 'Will Scarlet'.** See *L.* x *speciosa* 'Will Scarlet'.

Lobivia. See *Echinopsis* except for: *L. pygmaea* for which see *Rebutia pygmaea*.

LOBULARIA

BRASSICACEAE/CRUCIFERAE

Genus of summer- and early fall-flowering annuals and perennials. Frost hardy. Grow in sun and in fertile, well-drained soil. Deadhead to encourage continuous flowering. Ideal for containers and edging. Propagate by seed sown under glass in spring, or outdoors in late spring. May self-seed.
L. maritima, syn. *Alyssum maritimum* (Sweet alyssum). Fast-growing, spreading annual. H 2–12in (5–30cm), S 8–12in (20–30cm). Has lance-shaped, grayish-green leaves and rounded heads of tiny, scented, 4-petaled, white flowers in summer. H3.
Clear Crystal Series, H 6–10in (15–25cm), S 12–14in (30–35cm), are robust with narrow leaves and heads of tiny, 4-petaled, white and lavender-blue flowers in summer–fall. **'Rosie O' Day'** illus. p.304. **'Snow Crystals'** illus. p.298.
Snow Princess ('Inlbusnopr'), H 4–8in (10–20cm), S to 2ft (60cm), is vigorous and trailing with white flowers.
'Violet Queen', H 8in (20cm), is bushy, with profuse, fragrant, lilac-purple or deep purple flowers.

Loiseleuria procumbens. See *almia procumbens*.

LOMATIA

PROTEACEAE

Genus of evergreen shrubs and trees, grown for their foliage and flowers, which have 4 narrow, twisted petals. Frost hardy, but in cold areas needs shelter from strong winds. Needs sun or partial shade and moist but well-drained, acid soil. Propagate by softwood or semiripe cuttings in summer.
L. ferruginea. Evergreen, upright shrub or tree. H 30ft (10m), S 15ft (5m). Stout, brown-felted shoots bear oblong to ovate, dark green leaves, deeply cut into 6–15 oblong lobes. Racemes of yellow-and-red flowers are borne in midsummer. Thrives outside only in mild, moist areas. Z8–9

LONICERA

Honeysuckle

CAPRIFOLIACEAE

Genus of deciduous, semievergreen or evergreen shrubs and woody-stemmed, twining climbers, grown mainly for their flowers, which are often fragrant. Flowers are tubular, or funnel- to bell-shaped, with spreading, 2-lipped petal lobes. Climbers may be trained into large shrubs. Fully hardy to half hardy. Grows in any fertile, well-drained soil in sun or partial shade. Prune out flowered wood of climbers after flowering. Prune shrubs only to remove dead shoots or restrain growth. Propagate by seed in fall or spring, by semiripe cuttings in summer or by hardwood cuttings in late fall. Aphids may be a problem. ⓘ The berries may cause mild stomach upset if ingested. See also feature panel p.207.
L.* x *americana, syn. *L.* x *italica* of gardens, illus. p.206.
L.* x *brownii (Scarlet trumpet honeysuckle). Deciduous or semi-evergreen, twining climber. H 12ft (4m). Has paired, ovate, blue-green leaves and whorls of tubular, 2-lipped, orange to red flowers in summer, sometimes followed by red berries. H5. **'Dropmore Scarlet'** has long, trumpet-shaped, bright scarlet flowers over a long period.
L. etrusca (Etruscan honeysuckle). Deciduous or semievergreen, woody-stemmed, twining climber. H to 12ft 4m (12ft). Paired, ovate, mid-green leaves are blue-green beneath, the upper pairs united. In summer–fall, bears long, tubular, 2-lipped, fragrant yellow flowers, flushed red and darkening with age, followed by red berries. Grow in sun. H5. **'Michael Rosse'** (illus. p. 207) has glaucous leaves and pale yellow flowers that deepen in color as they mature. **'Superba'** (illus. p. 207) is vigorous, and bears large clusters of cream flowers that turn orange.
L. fragrantissima. Deciduous or semi-evergreen, bushy, spreading shrub. H 6ft (2m), S 10ft (3m). Paired, ovate leaves are dull, dark green above, blue-green beneath with bristly margins. Tubular, 2-lipped,very fragrant, creamy-white flowers open in winter and early spring. Berries are dull red. H6
***L.* 'Gold Flame'.** See *L.* x *heckrottii* 'Gold Flame'.
L.* x *heckrottii. Deciduous or semi-evergreen, twining climber. H 15ft (5m). Ovate, dark green leaves are blue-green beneath, the upper pairs united. In summer, bears terminal whorls of tubular, 2-lipped, fragrant, pink flowers, orange-yellow inside, sometimes followed by red berries. Z3–9. **'Gold Flame'** (syn. *L.* 'Gold Flame') is more vigorous, with brighter colored flowers.
L. henryi (illus. p.207). Evergreen or semievergreen, woody-stemmed, twining climber. H to 30ft (10m). Has paired, narrowly ovate, glossy, dark green leaves. Terminal or axillary whorls of tubular, 2-lipped, yellow-throated, purple-red flowers are borne in summer–fall, followed by purple-black berries. Z7–9
L. hildebrandiana (Giant Burmese honeysuckle). Evergreen or semievergreen, woody-stemmed, twining climber. H 30ft (10m) or more. Paired, ovate or rounded leaves are dark green. Long, tubular, 2-lipped, very fragrant, creamy-white flowers, aging to orange, are borne at the end of branches in summer, followed by red berries. Grow in full sun. Z10–11
L.* x *italica of gardens. See *L.* x *americana*.
L. japonica (Japanese honeysuckle). Vigorous, evergreen or semievergreen, twining climber. H 30ft (10m). Has paired, ovate, sometimes lobed, dark green leaves. From summer to early fall bears pairs of tubular, 2-lipped, very fragrant, white, often purple-flushed flowers from the leaf axils, followed by blue-black berries. Ideal for hiding an unsightly fence, shed, or wall and also good as groundcover, although requires control if space is limited. Z4–9.
'Aureoreticulata' (illus. p.207) has leaves attractively veined yellow.
'Halliana' is very vigorous, with pure white flowers that age to dark yellow.
L. ledebourii illus. p.136.
L. ligustrina* var. *pileata illus. p.167.
var. *yunnanensis* (syn. *L. nitida)* is an evergreen, bushy, dense shrub. H 6ft (2m), S 10ft (3m). Small, ovate, paired leaves are glossy dark green, lighter beneath. Pairs of tiny, tubular, fragrant, creamy-white flowers are borne from the leaf axils in late spring, followed by glossy, purple-blue berries. Good for hedging. Z7–9. **var. *yunnanensis* 'Baggesen's Gold'** illus. p.167.
L. maackii. Vigorous, deciduous, upright, often treelike shrub. H and S 15ft (5m). Paired, ovate-lance-shaped leaves are dark green. Fragrant, tubular, 2-lipped white flowers, aging to yellow, are borne in pairs along the shoots in early summer, followed by dark red berries. Z3–8
L. morrowii. Deciduous, spreading shrub with arching branches. H 6ft (2m), S 10ft (3m). Has paired, ovate, dark green leaves, purple-tinged when young. In late spring and early summer, bears small, tubular, 5-lobed, creamy-white flowers, aging to yellow along the shoots, followed by red berries. Z7–9
L. nitida. See *L. ligustrina* var. *yunnanensis*.
L. periclymenum (Common honeysuckle, Woodbine). Vigorous, deciduous, twining or scrambling climber. H 20–22ft (6–7m). Paired, ovate to oblong, mid-green leaves are glaucous beneath. From mid- to late summer, produces terminal whorls of long, tubular, 2-lipped, very fragrant, white to yellow, often red-flushed flowers, followed by bright red berries. Z4–8. **'Graham Thomas'** has cream flowers turning yellow, borne over a long period. **Serotina Group** (Late Dutch honeysuckle; illus. p.207) bears creamy-white flowers streaked dark red-purple. **'Sweet Sue'** bears very fragrant, creamy-white flowers that mature yellow.
L. pileata. See *L. ligustrina* var. *pileata*.
***L.* x *purpusii* 'Winter Beauty'** illus. p.163.
L. sempervirens (Coral honeysuckle; illus. p.207). Evergreen or deciduous, woody-stemmed, twining climber. H 12ft (4m). Paired, ovate leaves, are dark green above, blue-green beneath, the upper pairs united. Tubular, flowers with 2 short lips, rich scarlet-orange outside, yellowish-orange inside, are borne in terminal whorls in summer–fall, followed by bright red berries. Z4–9
L. standishii. Deciduous or semi-evergreen, upright shrub. H and S 6ft (2m). Paired, oblong-lance-shaped leaves are bristly, dark green. Bears tubular, 2-lipped, fragrant, creamy-white flowers, sometimes tinged very pale pink in pairs along the shoots from late fall to early spring, followed by red berries. Z5–8
L. tatarica illus. p.133. **'Hack's Red'** is a deciduous, bushy shrub. H and S 8ft (2.5m). Leaves are ovate and dark green. Produces small, tubular, 5-lobed, dark purplish red flowers in late spring and early summer, followed by red berries. Z3–8

***L.* x *tellmanniana*.** Deciduous, woody-stemmed, twining climber. H 15ft (5m). Has paired, ovate, deep green leaves, blue-white beneath, the upper pairs united. Bears terminal whorls of tubular, 2-lipped, bright copper-orange flowers from late spring to midsummer. Z5–9
***L. tragophylla*.** Deciduous, woody-stemmed, twining climber. H 20ft (6m). Paired, ovate to oblong, mid-green leaves are blue-white beneath, the upper pairs united. Long-tubed, 2-lipped, bright yellow or orange flowers, red-tinted above, are borne in large terminal whorls in mid- to late summer, followed by red berries. Z5–9
***L.* x *xylosteoides* 'Clavey's Dwarf'.** Deciduous, upright, dense, rounded shrub. H 5ft (1.5m), S 3ft (1m). Paired, ovate leaves are gray-green. Pairs of small, tubular, 2-lipped, white flowers are borne from the leaf axils in late spring and early summer, then red berries. Good as a hedge. Z4–9
L. xylosteum (Fly honeysuckle) illus. p.131.

***Lophocereus schottii*.** See *Pachycereus schottii*.

LOPHOMYRTUS

MYRTACEAE

Genus of evergreen shrubs or small trees, grown for their flowers, foliage, and fruit. Frost hardy to frost tender. Needs partial shade and fertile, humus-rich, moist but well-drained soil. Propagate by seed sown as soon as ripe or by semiripe cuttings in summer.
L. bullata, syn. *Myrtus bullata*. Evergreen, upright shrub. H 10–25ft (3–8m), S 3–10ft (1–3m). Rounded, puckered leaves, bronze-purple when young, mature glossy, dark green. Produces saucer-shaped, white flowers in late spring and early summer, followed by egg-shaped, black-red fruits. Z10–11

LOPHOPHORA

Peyote

CACTACEAE

Genus of very slow-growing, perennial cacti that resemble small, blue dumplings, with up to 10 ribs, each separated by an indented line. Has long tap roots. Flowering areoles each produce tufts of short, white hairs. Frost tender. Needs sun and well-drained soil. Very prone to rotting, so water lightly from spring to fall. Propagate by seed in spring or summer.
***L. echinata*.** See *L. williamsii*.
***L. lutea*.** See *L. williamsii*.
L. williamsii, syn. *L. echinata*, *L. lutea* Dumpling cactus, Mescal button), illus. p.492.

LOPHOSPERMUM

PLANTAGINACEAE

Genus of deciduous and evergreen, perennial climbers and shrubs. Has triangular to rounded leaves and tubular to funnel-shaped flowers. Frost hardy to frost tender. Needs sun and moist but well-drained soil. Propagate by seed in spring or semiripe cuttings in late summer.
L. erubescens, syn. *Asarina erubescens*, *Maurandya erubescens*, illus. p.460.

LOPHOSTEMON

MYRTACEAE

Genus of evergreen trees and shrubs, grown for their overall appearance when mature and for shade. Related to *Tristania* and *Eucalyptus*. Half hardy to frost tender. Needs sun or partial shade and fertile, well-drained soil. Other than shaping plants in winter, pruning is seldom necessary. Propagate by seed in spring or by semiripe cuttings in summer.
L. confertus, syn. *Tristania conferta*. (Brisbane box, Brush-box tree). Fast-growing, evergreen, round-headed tree. H 30–50ft (10–15m), S 10–30ft (3–10m). Bears lance-shaped, leathery, lustrous leaves. In spring bears white flowers with prominent, feathery stamen bundles. Z10–11
***L.* 'Perth Gold'.** Fast-growing, evergreen, round-headed tree. H 30–50ft (10–15m), S 10–30ft (3–10m). Produces lance-shaped, bright green leaves, strongly variegated yellow. In spring bears white flowers with prominent, feathery stamen bundles. Z7–12

LOROPETALUM

HAMAMELIDACEAE

Genus of evergreen shrubs or small trees, grown for their flowers. Frost hardy to half hardy; needs min. 41°F (5°C) to flower well. Requires full light or partial shade and rich, well-drained, neutral to acidic soil. Water containerized plants freely when in full growth, moderately at other times. Propagate by layering or seed in spring or by semiripe cuttings in late summer.
***L. chinense*.** Evergreen, rounded, well-branched shrub. H and S 6ft (1.8m). Asymmetrically ovate leaves are deep green. White flowers, each with 4 strap-shaped petals, are borne in tufted, terminal clusters, mainly in winter–spring. Z8–11

LOTUS

PAPILIONACEAE/LEGUMINOSAE

Genus of summer-flowering perennials, some of which are semievergreen, and evergreen subshrubs, grown for their foliage and flowers. Fully hardy to frost tender. Prefers sun and well-drained soil. Propagate by softwood cuttings from early to midsummer or by seed in fall or spring.
L. berthelotii (Coral gem) illus. p.306.
L. hirsutus, syn. *Dorycnium hirsutum* (Hairy canary clover). Deciduous, upright subshrub. H and S to 2ft 60cm). Bears silver-gray leaves with 3 ovate leaflets. Dense clusters of pealike, pink-tinged, white flowers in summer and early fall are followed by oblong to ovoid, reddish-brown seed pods. Z8–9

LUCULIA

RUBIACEAE

Genus of deciduous and evergreen shrubs and small trees, grown for their fragrant flowers and large, prominently veined leaves. Frost tender. Needs a position in full light or partial shade and fertile, well-drained soil. Water containerized specimens freely when in full growth, moderately at other times. If container-grown, cut back flowered stems hard in spring. Propagate by seed in spring or by semiripe cuttings in summer.
***L. grandifolia*.** Evergreen, rounded to upright, robust shrub. H 12–20ft (4–6m), S 6–12ft (2–4m). Ovate, green leaves have red veins and stalks. In summer, bears terminal clusters of fragrant, tubular, white flowers, each 2½in (6cm) long, with 5 rounded petal lobes. Z10–11 (min. 41°F/5°C)

LUETKEA

ROSACEAE

Genus of one species of deciduous subshrub, grown for its fluffy flower heads. Suitable for growing on banks and in a rock garden. Fully hardy. Requires a position in shade and well-drained but not too dry soil. Propagate by division or by seed in spring.
***L. pectinata*.** Deciduous, spreading, decumbent subshrub. H to 12in (30cm), S 8in (20cm). Stems are clothed in finely dissected, very dark green leaves. In summer, produces has terminal racemes of small, fluffy, off-white flower heads. Z5–8

LUMA

MYRTACEAE

Genus of evergreen shrubs and small trees, grown for their aromatic leaves and cup-shaped, white flowers. Frost hardy. Grow in full sun or partial shade and fertile, ideally humus-rich, well-drained soil. Propagate by seed in spring or by semiripe cuttings in late summer.
See also feature panel p.78.
L. apiculata, syn. *Amomyrtus luma*, *Myrceugenia apiculata*, *Myrtus apiculata*, *M. luma* (illus. p.78). Strong-growing, evergreen shrub. H and S 30–50ft (10–15m). Has peeling, golden-brown and gray-white bark and cup-shaped flowers amid aromatic leaves in summer–fall. Z8–11.
'Glanleam Gold' (syn. *Amomyrtus luma* 'Glanleam Gold', *Myrtus apiculata* 'Glanleam Gold'), H and S 10ft (3m), has stout stems, peeling, brown-and-white bark, and ovate, bright green leaves edged with creamy-yellow. Bears slightly fragrant flowers from midsummer to mid-fall.
L. chequen, syn. *Myrtus chequen*. Strong growing upright-shrub or small tree. H 20ft (6m), S 15ft (5m). Has broadly ovate, wavy-margined, aromatic, dark green leaves. In late summer and early fall, produces cup-shaped white flowers singly or in small clusters followed by black berries. Z9–11

LUNARIA

Honesty

BRASSICACEAE/CRUCIFERAE

Genus of annuals, biennials, and perennials, grown for their tall, open racemes of cross-shaped flowers and their seed pods, which are good for dried arrangements. Fully hardy. Will grow in sun or shade, but prefers partial shade and well-drained soil. Propagate perennials by seed in fall or spring, or by division in spring, biennials by seed only. Self-seeds prolifically.
L. annua, syn. *L. biennis* (Honesty). Fast-growing, erect biennial. H 2½ft (75cm), S 1ft (30cm). Has ovate to heart-shaped, coarsely toothed, light to mid-green leaves. Broad, leafy racemes of scented, 4-petaled, white to light purple flowers in spring and early summer are followed by rounded, silvery, seed pods. Z5–9.
'Variegata' illus. p.306.
***L. biennis*.** See *L. annua*.
***L. rediviva*.** Rosette-forming perennial. H 2–2½ft (60–75cm), S 1ft (30cm). Bears racemes of 4-petaled, lilac or white flowers in spring, followed by elliptical, silvery seed pods that are useful for indoor decoration. Has ovate, coarse, often maroon-tinted, mid-green leaves. Z6–10

LUPINUS

Lupin

PAPILIONACEAE/LEGUMINOSAE

Genus of annuals, perennials, and semi-evergreen shrubs, grown for their large racemes of pealike flowers. Fully hardy to half hardy. Prefers sun and well-drained soil. Remove seed heads of most varieties to prevent self-seeding. Propagate species by seed when fresh in fall; selected forms by cuttings from non-flowering side-shoots in spring or early summer. ⓘ The seeds may cause severe discomfort if ingested. Aphids can be a problem.
L. arboreus (Tree lupin) illus. p.159.
'Chelsea Blue' is a fast-growing, semi-evergreen shrub. H and S 6ft (2m). Bears hairy, gray-green leaves divided into 6–9 leaflets. Fragrant, pealike blue flowers are borne on upright spikes from late spring into summer. Z5–7
***L.* Band of Nobles Series.** Clump-forming perennials. H 36in (90cm), S 28in (70cm). In early and midsummer, racemes of flowers in white, yellow, pink, red, blue, or bicolors (usually white or yellow in combination with another color) are borne above palmate, deeply divided, mid-green leaves. Z4–7. **'Chandelier'** produces bright yellow flowers. **'My Castle'** bears deep rose-pink flowers. **'Noble Maiden'** produces creamy-white flowers. **'The Chatelaine'** illus. p.232. **'The Page'** bears deep carmine-red flowers.

LURONIUM

ALISMATACEAE

Genus of deciduous, perennial, marginal water plants and marsh plants, grown for their foliage and flowers. Fully hardy. Requires shallow water and full sun. Thin plants when overcrowded. Propagate in spring by seed or division.
L. natans, syn. *Alisma natans* (Floating water plantain). Deciduous, perennial, marginal water plant. H 1–2in (2.5–5cm), S 1ft (30cm). Produces small, elliptic to lance-shaped, mid-green leaves and, in summer, small, 3-lobed, yellow-spotted, white flowers. Z5–9

LUZULA

Woodrush

JUNCACEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
***L. maxima*.** See *L. sylvatica*.
L. nivea (Snowy woodrush) illus. p.284.
L. sylvatica, syn. *L. maxima* (Greater woodrush). **'Aureomarginata'** see *L.s.* 'Marginata'. **'Hohe Tatra'** illus. p.288. **'Marginata'** (syn. *L.s.* 'Aureomarginata')

is a slow-growing, evergreen, spreading, rhizomatous, perennial grass. H to 1ft (30cm), S indefinite. Produces thick tufts of broad, hairy-edged, mid-green leaves, with white margins. Leafy stems bear terminal, open, brown flower spikes in summer. Tolerates shade; suitable for woodland gardens. Z3–8

LYCASTE

ORCHIDACEAE

See also ORCHIDS.
L. cruenta (illus. p.467). Vigorous, deciduous, epiphytic orchid for a cool greenhouse. H and S 1½ft (45cm). Fragrant, triangular, green-and-yellow flowers, 2in (5cm) across, are produced singly in spring. Has broadly ovate, ribbed, soft leaves, to 1ft (30cm) long. Grow in partial shade during summer and avoid spraying, which can mark leaves. Z11–12 (min. 52ºF/11ºC; max. 86ºF/30ºC)

LYCHNIS

CARYOPHYLLACEAE

Genus of summer-flowering annuals, biennials, and perennials. Fully hardy. Require a wide range of soil-types, from dry to wet, also sunny to partially shaded positions. Propagate by division or seed in fall or spring.
***L.* 'Abbotswood Rose'.** See *L.* x *walkeri* 'Abbotswood Rose'.
L. alpina, syn. *Viscaria alpina* (Alpine catchfly). Tuft-forming perennial. H and S to 6in (15cm). Has dense tufts of thick, linear, deep green leaves. In summer, sticky stems each bear a rounded head of pale to deep pink or, rarely, white flowers with spreading, frilled petals. Suits a rock garden. Z3–8
L. chalcedonica illus. p.235.
***L. coeli-rosa*.** See *Silene coeli-rosa*.
L. coronaria illus. p.268. **'Alba'**, H 32in (80cm), S 18in (45cm), is a clump-forming perennial, often grown as a biennial. From mid-to late summer, produces white flowers in panicles on branched, gray stems, above gray leaves. Z4–8
L. flos-jovis illus. p.265.
L.* x *haageana, syn. *L.* x *haagena*. Short-lived, clump-forming perennial. H 1½ft (45cm), S 1ft (30cm). Clusters of large, 5-petaled, white, orange, or red flowers are borne in summer. Ovate leaves are mid-green. Best raised regularly from seed. Z5–8
***L.* x *haagena*.** See *L.* x *haageana*.
***L. viscaria*.** Clump-forming perennial. H 1ft (30cm), S 1–1½ft (30–45cm). From early to midsummer, rather sticky, star-shaped, reddish-purple flowers are borne in dense clusters above narrowly ovate to oblong, dark green leaves. Suitable for the front of a border or a rock garden. Z5–8. **'Splendens Plena'** illus. p.265.
***L.* x *walkeri* 'Abbotswood Rose'**, syn. *L.* 'Abbotswood Rose'. Neat, clump-forming perennial. H 12–15in (30–38cm), S 9in (23cm). Has ovate, gray leaves and gray, branching stems that, from mid- to late summer, bear sprays of rounded, 5-petaled, bright rose-pink flowers. Z6–9

LYCIANTHES

SOLANACEAE

Genus of perennials and shrubs grown mainly for their attractive flowers, also sometimes for their colored or variegated foliage. Commonly grown in containers for summer bedding; also good for borders. Half hardy. Needs a sunny site in moist, but not wet, fertile soil. Propagate by semiripe cuttings in summer or by seed sown in fall or spring.
L. rantonnetii, syn. *Solanum rantonnei, S. rantonnetti* (Blue potato bush). Lax, evergreen shrub. H and S 3–6ft (1–2m). Has ovate to lance-shaped, often wavy-margined, mid- to deep green leaves. In summer and fall, bears clusters of shallowly trumpet-shaped, dark blue to violet-blue flowers, to 1in (2.5cm) across, with paler blue or yellow-tinged centers, followed by ovoid red fruits. Z9–11. **'Royal Robe'** illus. p.310.

LYCIUM

SOLANACEAE

Genus of deciduous shrubs, sometimes with long, scandent branches, grown for their habit, flowers, and fruits. Useful for poor, dry soil and coastal gardens. May be grown as a hedge. Fully hardy to frost tender. Prefers full sun and not too rich, well-drained soil. Remove dead wood in winter and cut back to restrict growth if necessary. Cut back hedges hard in spring. Propagate by softwood cuttings in summer, by seed in fall, or by hardwood cuttings in winter.
L. barbarum, syn. *L. halimifolium* (Chinese box thorn, Duke of Argyll's tea-tree). Deciduous, arching, often spiny shrub. H 11½ft (3.5m), S 15ft (5m). Lance-shaped leaves are bright green or gray-green. In late spring and summer, produces funnel-shaped, purple or pink flowers, followed by spherical, orange-red berries. Z5–9
***L. halimifolium*.** See *L. barbarum*.

LYCORIS

AMARYLLIDACEAE

Genus of late summer- and early fall-flowering bulbs with showy flower heads on leafless stems. Frost hardy to half hardy; in cool areas is best grown in containers or planted in greenhouse borders. Needs sun, well-drained soil, and a warm period in summer to ripen bulbs so they flower. Provide regular liquid feed while in growth. After summer dormancy, water from early fall until following summer, when foliage dies away. Propagate by seed when ripe or in spring or summer or by off-sets in late summer.
L. aurea (Golden spider lily). Late summer- and early fall-flowering bulb. H to 2ft (60cm), S to 8in (20cm). Produces a head of 5 or 6 bright yellow flowers that have narrow, reflexed petals, with very wavy margins, and conspicuous stamens. Strap-shaped, semierect, basal leaves emerge after flowering. Z10–11
L. radiata (Red spider lily) illus. p.410.
L. squamigera (Resurrection lily). Late summer- or early fall-flowering bulb. H 18–28in (45–70cm), S 1ft (30cm). Bears a head of 6–8 fragrant, funnel-shaped, rose-pink flowers, 4in (10cm) long, with reflexed petal tips. Strap-shaped, semierect, basal leaves form after flowers. Z10–11

LYGODIUM

LYGODIACEAE

Genus of deciduous or semievergreen, climbing ferns, usually with 2 kinds of fronds: vegetative and fertile. Half hardy to frost tender. Requires shade or partial shade and humus-rich, moist, peaty soil. Best grown among shrubby plants that can provide support. Plants grown under glass in containers need support. Remove faded fronds regularly. Propagate by division in spring or by fresh spores in summer.
L. japonicum (Japanese climbing fern). Deciduous, climbing fern. H 6ft (2m), S indefinite. Mid-green fronds consist of delicate, finger-shaped pinnae; fertile fronds are broader and 3–5 lobed, with a longer, terminal lobe. Z11–12 (min. 41ºF/5ºC)

LYONIA

ERICACEAE

Genus of deciduous and evergreen shrubs, sometimes small trees, grown for their racemes of urn-shaped flowers. Fully to frost hardy. Needs full or partial shade and moist, peaty, acid soil. Propagate by semiripe cuttings in summer.
***L. ligustrina*.** Deciduous, bushy shrub. H and S 6ft (2m). Ovate, dark green leaves set off dense racemes of globular urn-shaped, white flowers from mid- to late summer. Z7–9
***L. ovateifolia*.** Deciduous or semi-evergreen, bushy shrub. H 10ft (3m), S 6ft (2m). Produces red shoots and ovate, dark green leaves. Racemes of urn-shaped, white flowers are borne in late spring and early summer. Z6–8

LYONOTHAMNUS

ROSACEAE

Genus of one species of evergreen tree, grown for its foliage and flowers. Frost hardy. Needs sun or partial shade, a warm, sheltered position, and fertile, well-drained soil. Propagate by softwood cuttings in summer or by seed in fall.
L. floribundus (Catalina ironwood). **subsp. *aspleniifolius*.** Evergreen, slender tree. H 40ft (12m), S 20ft (6m), has rather stringy, reddish-brown bark and much divided, fernlike, dark green leaves. Large, flattened heads of 5-petaled, star-shaped white flowers are produced in early summer. Z8–10

LYSICHITON

ARACEAE

Genus of deciduous, perennial, marginal water plants and bog plants, grown for their handsome spathes and very large, glossy foliage. Fully hardy. Prefers full sun, but tolerates partial shade. Tolerates both still and running water. Propagate by seed sown when fresh, in late summer.
***L. americanum*.** See *L. americanus*.
L. americanus, syn. *L. americanum*, illus. p.444.
L. camtschatcensis illus. p.434.

LYSIMACHIA

Loosestrife

PRIMULACEAE

Genus of summer-flowering, herbaceous, and evergreen perennials and shrubs, suitable for the border or rock garden. Fully to frost tender. Prefers a sunny or partially shaded position and moist but well-drained soil. Propagate by division in spring or by seed in fall.
***L. ciliata* 'Firecracker'.** Erect, clump-forming perennial. H 20–36in (50–90m), S 4–20in (10–50cm). Slender stems bear solitary or paired, slightly pendent, star-shaped, yellow flowers, with small, reddish brown centers, in summer. Ovate to lance-shaped leaves are rich deep purple. Z3–8
L. clethroides illus. p.437.
***L. congestiflora* 'Outback Sunset'** illus. p.323.
***L. ephemerum*.** Neat, clump-forming perennial. H 3ft (90cm), S 1ft (30cm). Erect, terminal racemes of star-shaped, grayish-white flowers are borne on slender stems in summer, followed by light green seed heads. Lance-shaped leaves are leathery and glaucous. Z3–8
***L. nummularia* 'Aurea'** (Golden creeping Jenny) illus. p.372.
L. punctata (Garden loosestrife) illus. p.243.

LYSIONOTUS

GESNERIACEAE

Genus of evergreen, creeping, shrubby perennials, grown for their relatively large, tubular, inflated, white to pink flowers. Half hardy. Requires humus-rich, moist but well-drained soil in partial or full shade. Propagate by cuttings in summer or by seed in spring.
***L. pauciflorus*.** Evergreen, suckering, shrubby perennial. H 8–12in (20–30cm), S 20in (50cm). Erect, woody stems have ovate, toothed, rigid, leathery, dark green leaves, ¾–1¼in (2–3cm) long, and bear tubular, purple-striped, pale lilac flowers in summer–fall. Z10–11

LYTHRUM

Loosestrife

LYTHRACEAE

Genus of summer-flowering annuals and perennials that thrive by the waterside and in bog gardens. Fully hardy. Grows in full sun or partial shade and in moist or wet soil. Propagate cultivars by division in spring, species by seed, or division in spring or fall. Some species have become noxious weeds in the US.
***L. salicaria* 'Feuerkerze'**, syn. *L.s.* 'Firecandle', illus. p.234. **'Firecandle'** see *L.s.* 'Feuerkerze'. **'Robert'** is a clump-forming perennial. H 3ft (90cm), S 1½ft (45cm). Leaves are mid-green and lance-shaped. Bears racemes of 4-petaled, clear pink flowers from mid- to late summer. Z3–8
***L. virgatum* 'Rose Queen'.** Clump-forming perennial. H 2ft (60cm), S 1½ft (45cm). Racemes of 4-petaled, star-shaped, light pink flowers are borne from mid- to late summer above lance-shaped, hairless, mid-green leaves. Z3–8. **'The Rocket'**, H 32in (80m), bears slender spikes of red flowers above mid-green leaves in summer. Good for a waterside or bog garden.

M

MAACKIA

PAPILIONACEAE/LEGUMINOSAE

Genus of deciduous, summer-flowering trees or shrubs, grown for their foliage and flowers. Fully hardy. Requires full sun and fertile, well-drained soil. Propagate by seed in fall or by greenwood cuttings in early or midsummer.

M. amurensis illus. p.85

MACADAMIA

PROTEACEAE

Genus of evergreen trees, grown for their foliage and fruits. Frost tender. Prefers full light, though some shade is tolerated. Provide humus-rich, moisture-retentive but well-drained soil. Water freely while in full growth, moderately at other times. Pruning is not usually necessary, but is tolerated in fall. Propagate by seed when ripe, in fall or in spring.

M. integrifolia (Macadamia nut, Queensland nut). Spreading tree. H and S 50ft (15m). Has whorls of leathery, semi-glossy leaves and edible, brown nuts in fall. Produces panicles of small, creamy-yellow flowers in spring. Z11–12 (min. 50ºF/10ºC)

MACFADYENA

SYN. DOXANTHA

Cat's claw vine

BIGNONIACEAE

Genus of evergreen, woody-stemmed, tendril climbers, grown for their foxglovelike flowers. Frost hardy to frost tender. Any fertile, well-drained soil is suitable with full light. Water regularly, less when not in full growth. Provide support for stems. Thin out crowded shoots after flowering or in spring. Propagate by semiripe cuttings in summer.

M. unguis-cati, syn. *Bignonia unguis-cati*, *Doxantha unguis-cati* (Common cat's claw vine). Fast-growing, evergreen, woody-stemmed, tendril climber. H 25–30ft (8–10m). Leaves have 2 leaflets and a tendril. Bears yellow flowers, 4in (10cm) long, in late spring or early summer. Z9–11

MACKAYA

ACANTHACEAE

Genus of one species of evergreen shrub, grown for its flowers and overall appearance. Frost tender. Requires full light or partial shade and fertile, well-drained soil. Water potted plants freely when in full growth, moderately at other times. Pruning is tolerated in winter if necessary. Propagate by seed in spring or by semiripe cuttings in summer.

M. bella, syn. *Asystasia bella*. Evergreen, erect then spreading, well-branched shrub. H 3–12ft (1–4m), S 3–6ft (1–2m). Leaves are elliptic, slender-pointed, lustrous and deep green. Has spikes of narrowly funnel-shaped flowers, each with 5 large, flared, pale lilac petal lobes finely veined dark purple, from spring to fall. In warm conditions, above 55°F (13°C), will flower into winter. Z11–12 (min. 50ºF/10ºC)

MACLEANIA

ERICACEAE

Genus of evergreen, spring- to summer-flowering shrubs and climbers, some scrambling, grown for their flowers. Frost tender. Requires partial shade and humus-rich, well-drained, acidic soil. Water potted specimens moderately, less when not in full growth. Shorten long shoots in winter or after flowering. Propagate by seed in spring, by semiripe cuttings in early summer, or by layering in fall.

M. insignis. Evergreen, scrambling climber with erect, sparingly branched, wandlike stems. H 10ft (3m), S 3–10ft (1–3m). Has ovate, leathery, deep green leaves, red-flushed when young. Tubular, waxy, scarlet flowers, with white tips, hang in clusters in summer. Needs support. Z11–12 (min. 10ºC/50ºF)

MACLEAYA

Plume poppy

PAPAVERACEAE

Genus of summer-flowering perennials, grown for their flowers and foliage. Fully hardy. Requires a position in sun and in well-drained soil. May spread rapidly. Propagate by division in late fall or early spring or by root cuttings in winter.

M. cordata, syn. *Bocconia cordata* (Plume poppy). Rhizomatous perennial. H 5ft (1.5m) or more, S 2ft (60cm) or more. Large, rounded, lobed, gray-green leaves, gray-white beneath, are produced at base of plant and up lower parts of stems. Large, feathery panicles of dainty, creamy-white flowers are borne in summer. Z3–8.

***M.* x *kewensis* 'Flamingo'.** Rhizomatous perennial. H to 8ft (2.5m), S 3ft (1m). Has large, rounded, lobed, gray-green leaves, gray-white beneath. Bears large, feathery panicles with pink buds and neat, buff-pink flowers in summer. Z3–8

***M. microcarpa* 'Kelway's Coral Plume'** illus. p.216.

MACLURA

MORACEAE

Genus of usually thorny, evergreen or deciduous trees, shrubs, and climbers, with branches often reduced to spines. Grown for their foliage and unusual fruits; both male and female trees need to be planted to obtain fruits. Fully hardy, but young plants are susceptible to frost damage. Requires full sun and needs hot summers to thrive in cold areas. Grows in any but waterlogged soil. Propagate by softwood cuttings in summer, by seed in fall, or by root cuttings in late winter.

M. aurantiaca. See *M. pomifera*.

M. pomifera, syn. *M. aurantiaca* (Osage orange). Deciduous, rounded, spreading tree. H 50ft (15m), S 40ft (12m). Has spiny shoots and ovate, dark green leaves that turn yellow in fall. Tiny, cup-shaped, yellow flowers in summer are followed on female trees by large, rounded, wrinkled, yellow-green fruits. Z5-9

M. tricuspidata, syn. *Cudrania tricuspidata*. Deciduous, compact tree. H 22ft (7m), S 20ft (6m). Bears ovate, dark green leaves that are sometimes 3-lobed. Has small, rounded clusters of tiny, green flowers in midsummer. (borderline) Z8–10

Macrotomia echioides. See *Arnebia pulchra*.

MACROZAMIA

ZAMIACEAE

Genus of slow-growing, evergreen shrubs and small trees, with or without trunks, grown for their palmlike appearance. Mature plants may produce conical, green flower spikes. Frost tender. Needs full light or partial shade and well-drained soil. Water containerized plants moderately when in full growth, less at other times. Propagate by seed in spring.

M. corallipes. See *M. spiralis*.

M. spiralis, syn. *M. corallipes*. Evergreen, palmlike shrub with a very short, mainly underground trunk. H and S 2–3ft (60cm–100m). Has a rosette of deep green leaves, each with a spirally twisted midrib and very narrow, leathery leaflets. Z11–12 (min. 50ºF/10ºC)

MAGNOLIA

SYN. MICHELIA

MAGNOLIACEAE

Genus of deciduous and evergreen trees and shrubs, grown for their showy flowers. Leaves are mainly ovate. Fully to frost hardy. Flowers and buds of early-flowering magnolias may be damaged by late frosts. Needs sun or partial shade and shelter from strong winds. Prefers fertile, well-drained soil. *M. delavayi*, *M. kobus*, *M. sieboldii* and *M. wilsonii* grow on chalky soil. Other species prefer neutral to acidic soil, but will grow in alkaline soil if deep and humus-rich. Dry, sandy soils should be generously enriched with manure and leaf mold before planting. Propagate species by semiripe cuttings in summer or by seed, when ripe, in fall, selected forms by semiripe cuttings in summer, or grafting in winter. See also feature pp.70–71.

M. acuminata (Cucumber tree). Vigorous, deciduous tree, conical when young, later spreading. H 70ft (20m), S 30ft (10m). In late spring and early summer, bears fragrant, cup-shaped, yellow-green or bluish-green flowers, to 3½in (9cm) across, amid large, ovate, pale green leaves. Flowers are followed by small, egg-shaped, red or brown fruits. Z3–8

***M.* 'Athene'.** Vigorous, deciduous, upright to spreading, early-flowering tree. H 20ft (6m), S 15ft (5m). Has ovate, mid-green leaves. In early to mid-spring, bears large, cup-shaped, creamy-white flowers, 8–12in (20–30cm) across, violet-pink at the bases, with thick petals. Z6–8

***M.* Black Tulip ('Jurmag1')** (illus. p.70). Vigorous, deciduous, densely branched tree. H to 40ft (12m), S 20ft (6m). Produces large, goblet-shaped, very dark wine-purple flowers, 8in (20cm) across or more, in early spring, before the large, ovate, mid-green leaves unfold. Z5–9

***M.* x *brooklynenesis* 'Yellow Bird'** (illus. p.70). Variable, deciduous, upright, slightly pyramidal tree. H 40ft (12m), S 20ft (6m). Has ovate, mid-green leaves and deep yellow flowers, 4in (10cm) or more across, tinged green at the bases, in spring. Z3–8

***M.* 'Butterflies'** (illus. p.70). Deciduous, upright tree. H and S 10ft (3m). Has ovate, mid-green leaves. Goblet- to tulip-shaped, bright deep yellow flowers, 4in (10cm) across or more, are borne in mid-spring opening widely as they mature to reveal orange-red stamens. Z3–8

***M.* 'Caerhays Belle'.** Spreading, deciduous tree. H 30ft (10m), S 22ft (7m). Has ovate, mid-green leaves, tapering at both ends. Bears large, cup-shaped, light salmon-pink flowers, to 1ft (30cm) across, paler inside, in early spring before the leaves. Red fruiting cones, like small cucumbers, ripen in late summer. May be damaged by spring frosts. Z6–9

M. campbellii*.** Deciduous tree, upright when young, later spreading. H 50ft (15m), S 30ft (10m). Bears large, slightly fragrant, white, red, or pale to deep pink flowers, to 1ft (30cm) across, on leafless branches from late winter to mid-spring on trees 15–20 years old or more. Z7–10. **'Charles Raffill'** bears large, fragrant, cup-shaped, purplish-pink flowers on trees at least 15 years old. Leaves are large, ovate and mid-green. **'Darjeeling'** has large, very deep pink flowers. **subsp. *mollicomata (illus. p.70) has lilac-pink flowers slightly earlier in the year.

***M.* 'Daphne'.** Compact, upright, deciduous shrub or small tree. H 15–22ft (5–7m), S 6–10ft (2–3m). Has broadly ovate, pointed, mid-green leaves. In late spring, bears deep yellow flowers, 4in (10cm) across; they are erect and held above the leaves at first, to avoid damaging frosts. Z5–10

***M.* 'Daybreak'.** Floriferous, small to medium-sized, columnar tree. H 20–25ft (6–8m), S 6–10ft (2–3m). Has large, ovate, mid-green leaves. Large, upright, very fragrant, light rose-pink flowers, to 10in (25cm) across, deeper pink outside, are borne in late spring, with the emerging leaves; flowers from an early age. Z5–8

***M. delavayi*.** Evergreen, rounded, dense shrub or tree. H and S 30ft (10m). Large, slightly fragrant, bowl-shaped, parchment-white flowers, to 8in (20cm) across are short-lived and open intermittently from midsummer to early fall. Large, ovate leaves are deep blue-green above and bluish-white beneath. Z7–10

M. denudata, syn. *M. heptapeta* (Lily tree, Yulan). Deciduous, spreading shrub or tree. H and S 30ft (10m). Bears profuse fragrant, cup-shaped, white flowers, to 6in (15cm) across, from mid- to late spring before ovate, mid-green leaves emerge. Z3–8

M. doltsopa, syn. *Michelia doltsopa* (illus. p.70). Evergreen, rounded tree. H 25–50ft (8–15m), S 15–30ft (5–10m). Has ovate, glossy, dark green leaves, paler beneath, and fragrant, bowl-shaped, white to pale yellow flowers, 3–4in (7–10cm) across, from spring to early summer. Z9–11

***M.* 'Elizabeth'** (illus. p.70). Small to medium-sized, deciduous, multi-stemmed conical tree. H to 30ft (10m), S to 20ft (6m). In spring, produces cupped, fragrant, primrose-yellow flowers, to 6in (15cm) across, with red stamens. Ovate, dark green leaves, to 8in (20cm) long, are coppery in color when they unfold in spring. Z3–8

M. ernestii, syn. *Michelia wilsonii*. Tall, broadly conical, evergreen shrub or small tree. H 10m (30ft), S 5m (15ft). New green shoots are downy. Ovate to lance-shaped, glossy leaves are grayish-white beneath. In spring, bears fragrant, fleshy, yellow flowers, 2½–3½in (6-9cm) across. Z9–11

M. figo, syn. *Michelia figo*. Evergreen, rounded shrub. H 10–20ft (3–6m), S 5–11½ft (1.5–3.5m). Has glossy, rich green leaves, paler beneath. From spring to summer, bears banana-scented, white to yellowish-green flowers, 1¼in (3cm) across, edged red or maroon. Z8–10

M. fordiana, syn. *Manglietia fordiana*. Upright shrub or small tree, with a roundish head. H 22ft (7m), S 20ft (6m). Long, narrow, dark green leaves have sparse, rusty brown hairs beneath. In early summer, red-flushed, gray-green buds open to wide, creamy-white flowers, 5–5½in (12–14cm) across, with maroon-red anthers. Z8–10

***M.* 'Galaxy'** (illus. p.70). Deciduous, conical to upright tree. H 20ft (6m), S 10ft (3m). Large, slightly fragrant, narrowly goblet-shaped, pinkish-purple flowers, 5in (12cm) across, purple-red outside, open from deep purple buds in early spring before ovate, mid-green leaves emerge. Z3–8

M. globosa. Deciduous, rounded shrub or tree. H and S 15ft (5m). Has large, ovate, glossy, dark green leaves and, in early summer, fragrant, cup-shaped, creamy-white flowers, to 5in (12cm) across, with red anthers. Z6–10

***M.* 'Gold Star'.** Fast-growing, upright, deciduous shrub or small tree. H 20ft (6m), S 15ft (5m). Has ovate, mid-green leaves, reddish-bronze when young. Star-shaped, creamy-yellow flowers, to 4in (10cm) across, with strap-shaped petals, are borne before the leaves in mid-spring. Z5–8

M. grandiflora (Bull bay). Evergreen, broadly conical or rounded, dense tree. H and S 30ft (10m). Bears large, very fragrant, bowl-shaped, white flowers, to 10in (25cm) across, intermittently from midsummer to early fall. Has oblong, glossy, mid- to dark green leaves. Z6–10. **'Exmouth'** (illus. p.70) bears creamy-white flowers and narrow, leathery leaves. **'Kay Parris'** is fast-growing and free-flowering over a long season, with pinkish young leaves, quickly turning green above, orange-brown beneath. **'Victoria'** has leaves that are rich rust-brown beneath.

***M.* 'Heaven Scent'** illus. p.72.

M. heptapeta. See *M. denudata*.

M. hypoleuca. See *M. obovata*.

M. insignis, syn. *Manglietia insignis*. Evergreen, erect, then spreading tree. H 25–40ft (8–12m), S 10–15ft (3–5m). Leaves are narrowly ovate, lustrous, dark green above, bluish-green beneath. In early summer, bears solitary, cream-flushed, pink to carmine flowers, 3in (8cm) across. Z7–10

***M.* x *kewensis* 'Wada's Memory'**. See *M. salicifolia* 'Wada's Memory'.

M. kobus. Deciduous, broadly conical tree. H 30ft (10m), S 25ft (8m). Profuse, fragrant, pure white flowers, to 4in (10cm) across, open in mid-spring before small, slightly aromatic, dark green leaves emerge. Z3–8

M. laevifolia, syn. *Michelia yunnanensis*. Dense, rounded, bushy evergreen shrub. H and S 12ft (4m). Has ovate, semi-glossy, dark green leaves, lightly downy beneath. In mid- to late spring, fragrant, pure white flowers, emerge from velvet-brown buds. (borderline) Z8–11. **'Gail's Favourite'** is very free-flowering.

M. liliiflora, syn. *M. quinquepeta*. Deciduous, bushy shrub. H 10ft (3m), S 12ft (4m). Bears fragrant, upright, vase-shaped, purplish-pink flowers, to 3in (7cm) across, amid ovate, very dark green leaves, from mid-spring to midsummer. Z3–8. **'Nigra'** (illus. p.70) has large, deep purple flowers.

***M.* x *loebneri* 'Donna'.** Deciduous, densely branched, roundish to spreading shrub. H 30ft (10m), S 22ft (7m). Mid-green leaves are narrowly ovate. Pale pink buds open to large, fragrant, pure white flowers, 6–7in (15–18cm) across, before the leaves in mid-spring. Z4–8. **'Leonard Messel'** (illus. p.70) is more rounded in habit, with abundant, fragrant, pale lilac-pink flowers. **'Mag's Pirouette'**, H and S 8ft (2.5m), is small and fairly slow-growing, forming a densely branched, roundish shrub with gardenialike, pure white flowers, 2–4in (5–10cm) across. **'Merrill'** has initially goblet-shaped, then star-shaped white flowers. **'Wildcat'**, H 10ft (3m), S 6ft (2m), is compact and upright. Bears double, white flowers, with up to 52 narrow petals, that open from soft-pink buds.

***M.* 'Lois'.** Vigorous, deciduous, conical tree. H to 15m (50ft), S 10m (30ft). Broadly ovate, bright green leaves turn copper-bronze in fall. Fragrant, cup-shaped, showy, pale lemon-yellow flowers open in mid-spring with the emerging leaves. Flowers are smaller, but darker, than 'Elizabeth', and do not fade. Z4–8

M. macrophylla (Great-leaved magnolia, Umbrella tree). Deciduous, broadly upright tree, becoming rounded with age. H and S 30ft (10m). Has stout, blue-gray shoots and very large, ovate, bright green leaves. Large, fragrant, bowl-shaped, parchment-white flowers, to 1ft (30cm) across, open in early summer. Z5–8

***M.* 'Manchu Fan'.** Vigorous, deciduous shrub or tree. H 20ft (6m), S 15ft (5m). Mid-green leaves are ovate. In late spring, bears large, goblet-shaped, creamy-white flowers, to 5in (12cm) across, the inner ones flushed purple-pink at the bases. Z3–8

M. maudiae, syn. *Michelia maudiae*. Tall, upright, evergreen shrub or small tree. H 30ft (10m), S 15ft (5m). Has ovate, deep green leaves, gray-green beneath. In early spring, bears fragrant, white flowers, to 6in (15cm) across, stained pink at the bases, with pale purple stamens. Z7–10

***M.* 'Milky Way'.** Deciduous, vigorous, upright, open-branched tree. H 30ft (10m), S 25ft (8m). Has variously ovate, mid-green leaves, to 8in (20cm) long. Bears large, cup-and-saucer-shaped, creamy-white to white flowers, to 10in (25cm) across, stained soft pink at the bases, in mid-spring. Blooms freely even when young. Z7–9

M. obovata, syn. *M. hypoleuca* (Japanese big-leaf magnolia). Vigorous, deciduous, upright tree. H 50ft (15m), S 30ft (10m). Bears large, fragrant, pink-flushed, white or pale cream flowers, to 8in (20cm) across, with crimson stamens in early summer. Z3–8

M. parviflora. See *M. sieboldii*.

***M.* 'Pegasus'.** Deciduous shrub or multi-stemmed tree, initially vase-shaped, later spreading. H and S 20ft (6m). Has ovate, dark green leaves, pale green beneath. In spring, before and with the young leaves, bears cup-shaped, creamy- or yellowish-white flowers, to 4in (10cm) across, suffused purplish-pink at the bases. Z4–8

M. quinquepeta. See *M. liliiflora*.

***M.* 'Ricki'.** Upright, deciduous shrub. H and S 12ft (4m). Goblet-shaped flowers, to 6in (15cm) across, each with 15 twisted petals that are pink to dark purple-pink at the bases, open from dark purple-pink buds in mid-spring. Leaves are broadly ovate and mid-green. Z3–8

M. salicifolia (Willow-leaved magnolia). Deciduous, conical tree. H 30ft (10m), S 15ft (5m). Has aromatic, ovate leaves, mid-green above, gray-white beneath. Fragrant, pure white flowers, to 4in (10cm) across, open in mid-spring before foliage develops. Z3–8. **'Wada's Memory'** (syn. *M.* x *kewensis* 'Wada's Memory') has coppery-red young foliage and a profusion of large flowers borne from mid- to late spring.

M. sargentiana. Deciduous, broadly conical tree. H 50ft (15m), S 30ft (10m). From mid- to late spring, bears large, fragrant, narrowly bowl-shaped, many-petaled flowers, 8in (20cm) across, white inside, purplish-pink outside, before ovate, dark green leaves emerge. Z6–10

M. sieboldii, syn. *M. parviflora*. Deciduous, arching, spreading shrub. H 25ft (8m), S 40ft (12m). Fragrant, cup-shaped, white flowers, to 4in (10cm) across, with crimson anthers, are held above ovate, dark green leaves from late spring to late summer. Z6–8. **subsp. *sinensis*** (syn. *M. sinensis*) has slightly larger, pendent flowers and more rounded, ovate leaves.

M. sinensis. See. *M. sieboldii* subsp. *sinensis*.

***M.* x *soulangeana* 'Alba'** see *M.* x *s.* 'Alba Superba'. **'Alba Superba'** (syn. *M.* x *s.* 'Alba') is a deciduous, rounded, upright shrub or small tree. H and S 20ft (6m). Produces large, fragrant, tuliplike, white flowers, 3–12in (8-30cm) across, faintly flushed with pink at the bases, from mid- to early spring, before mid- to dark green leaves emerge. **'Brozzonii'**, H 25ft (8m), S 20ft (6m), is treelike and bears large, purple-flushed, white flowers. **'Etienne Soulange-Bodin'** has purple-flushed, white blooms. Flowers of **'Lennei'** are large, goblet-shaped, and deep rose-purple. **'Lennei Alba'** produces ivory-white blooms. **'Pickard's Schmetterling'** has distinctive, slender, upright flower buds, opening to long, narrow, creamy-white petals, stained wine-red outside. **'Picture'**, H 25ft (8m), S 20ft (6m), is vigorous, compact, and erect in habit, with large, deep reddish-purple flowers. **'Rubra'** of gardens see *M.* x *s.* 'Rustica Rubra'. **'Rustica Rubra'** (syn. *M.* x *s.* 'Rubra' of gardens; illus. p.70), has purplish-red flowers, suffused pink. Z4–9

***M.* 'Spectrum'** (illus. p.70). Large, eventually broadly pyramidal, deciduous shrub or small tree. H 28ft (9m), S 22ft (7m). Has ovate, mid-green leaves. In mid-spring, sickle-shaped, reddish-purple flower buds open to deep rose-pink flowers, to 8in (20cm) across, paler inside. Z4–9

M. sprengeri. Deciduous, spreading tree. H 50ft x (50ft), S 30ft (10m). In mid-spring, has fragrant, bowl-shaped, white flowers, to 6in (15cm) across, sometimes fringed with red or pale pink, before ovate, dark green leaves appear. Z4–9. **var. *diva* 'Copeland Court'** is taller, with long leaves, silver-hairy beneath, and clear deep pink flowers, to 8in (20cm) across. **'Lanhydrock'** is taller, with deeper pink flowers.

M. stellata (Star magnolia; illus. p.70). Deciduous, bushy then spreading shrub. H 10ft (3m), S 12ft (4m). Fragrant, star-shaped flowers, 5in (12cm) across, with many narrow petals open from silky buds in early to mid-spring. Leaves are narrow and deep green. Z4–8. **'Rosea'** has warm pink buds that open pale pink. **'Royal Star'** (illus. p.70) has faintly pink buds and white flowers. **'Waterlily'** (illus. p.70) has large, white flowers with up to 32 petals.

***M.* 'Susan'** (illus. p.70). Upright, deciduous shrub. H 12ft (4m), S 10ft (3m). Has ovate, mid-green leaves. In mid-spring, narrowly goblet-shaped, fragrant flowers, to 6in (15cm) across, with slightly twisted petals, purple-red outside and paler inside, open from slender, dark red-purple buds. Z4–8

M. tripetala (Elkwood, Umbrella tree). Deciduous, broadly conical, open tree. H 30ft (10m), S 25ft (8m). Has large, dark green leaves, clustered around shoot tips, and rather unpleasantly scented, creamy-white flowers, to 6in (15cm) across, with narrow petals, in late spring and early summer. Z4–8

***M.* x *veitchii* 'Peter Veitch'.** Fast-growing, deciduous, spreading tree. H 70ft (20m), S 50ft (15m). Bears large, fragrant, goblet-shaped, pale pink flowers, 6in (15cm) long, fading to white at petal tips, in mid-spring before leaves emerge. Leaves are purple-green when young, dark green when mature. Usually flowers within 10 years of planting. Z4–9

M. virginiana (Sweet bay). Deciduous or semievergreen, conical shrub or tree. H 28ft (9m), S 20ft (6m). Has very fragrant, cup-shaped, creamy-white flowers, to 2½in (6cm) across, from early summer to early fall. Oblong, glossy, mid- to dark green leaves are bluish-white beneath. Z5–10

M.* x *watsonii. See *M.* x *wieseneri*.

M.* x *wieseneri, syn. *M.* x *watsonii*. Deciduous, spreading, open tree or shrub. H 25ft (8m), S 15ft (5m). Rounded, white buds open in late spring to early summer to fragrant, creamy-white flowers, 6in (15cm) across, flushed pink outside and with crimson stamens. Z4–9

M. wilsonii (illus. p.70). Spreading, deciduous shrub or small tree. H and S 20ft (6m). Has red-purple shoots and ovate to lance-shaped, dark green leaves, felted red-brown beneath. In late spring to early summer, bears pendent, cup-shaped, white flowers, to 4in (10cm) across, with crimson stamens. Z6–9

***M.* 'Yellow Lantern'.** Deciduous, pyramidal to ovate-shaped tree with a single trunk. H 20–28ft (6–9m), S 10–15ft (3–5m). Has large, ovate, dark green leaves. In mid- to late spring, erect, tulip-shaped, pale lemon flowers, 6–8in (15–20cm) across, faintly flushed pink at the bases, are borne just before and with emerging leaves. Z4–8

x MAHOBERBERIS

BERBERIDACEAE

Hybrid genus (*Berberis* x *Mahonia*) of evergreen shrubs, grown for their foliage, flowers and botanical interest. Fully hardy. Needs partial shade and fertile, well-

drained soil. Propagate by semiripe cuttings in late summer or fall.
M. aquisargentii. Evergreen, upright, densely leaved shrub. H and S 6ft (2m). Leaves are bright green, often with 3 leaflets, some oblong and finely toothed, others holly-shaped. Terminal clusters of berberislike, yellow flowers are sparsely produced in early summer. Z5–9

MAHONIA

BERBERIDACEAE

Genus of evergreen shrubs, grown for their foliage, their often fragrant, rounded, bell-shaped, yellow flowers, and, with the tall species and cultivars, for their deeply fissured bark. Large mahonias are good specimen plants; low-growing ones are excellent for groundcover. Fully hardy to frost tender. Prefers shade or partial shade and fertile, well-drained, but not too dry, soil. Propagate species by leaf-bud or semiripe cuttings in late summer to fall, or by seed in fall, selected forms by leaf-bud or semiripe cuttings only.
M. aquifolium (Oregon grape) illus. p.148. **'Apollo'** is a wide-spreading, low, stem-rooting shrub. H 2ft (60cm), S 3ft (1m). Has dark-green, divided leaves, with up to 9 spiny-toothed leaflets, that turn bronze in winter. Deep golden yellow flowers are borne in large, pyramidal clusters in spring. Blue-black berries follow. **'Fascicularis'** see *M.* x *wagneri* 'Pinnacle'. Z5-9
M. bealei, syn. *M. japonica* Bealei Group. Erect shrub with stout, upright branches. H 6ft (2m), S 10ft (3m). Blue-green leaves are divided into broad leaflets. From late fall to early spring, bears fragrant, pale yellow flowers in short, upright racemes, followed by blue-purple berries. Z5–9
M. japonica illus. p.144. **Bealei Group** see *M. bealei*.
M. lomariifolia. See *M. oiwakensis* subsp. *lomariifolia*.
***M.* x *media* 'Buckland'** illus. p.118. **'Charity'** illus. p.118. **'Winter Sun'** is an erect shrub. H to 15ft (5m), S to 12ft (4m). Has long leaves with 17–21 ovate to lance-shaped, spiny, dark green leaflets. Bears bright yellow flowers in densely clustered, arching racemes, from late fall to late winter. Z5–9
***M. nepalensis* 'Cabaret'**. See *M. nitens* 'Cabaret'.
***M. nitens* 'Cabaret'**, syn. *M. nepaulensis* 'Cabaret'. Small, compact, freely branching shrub. H 5ft (1.5m), S 4ft (1.2m). Glossy, ovate, dark green leaves have pairs of sparsely spined leaflets, each with a triangular red stain at the base, which is conspicuous in winter. Bears many small, deep yellow flowers with red outer petals from midsummer to early fall. Z6–9
M. oiwakensis* subsp. *lomariifolia, syn. *M. lomariifolia*. Evergreen, very upright shrub or small tree. H 10ft (3m), S 6ft (2m). Large, dark green leaves each have up to 41 narrow, hollylike, spiny leaflets. Fragrant, bright yellow flowers are produced in dense, upright spikes from early fall to winter. Z6–9
M. pinnata of gardens. See *M.* x *wagneri* 'Pinnacle'.
M. repens. Evergreen, upright shrub, spreading by underground stems. H 1ft (30cm), S 6ft (2m). Blue-green leaves each consist of wavy-edged, ovate leaflets, with bristlelike teeth. Dense clusters of deep yellow flowers are borne from mid- to late spring, followed by blue-black berries. Z4–8
***M.* 'Undulata'**. See *M.* x *wagneri* 'Undulata'.
***M.* x *wagneri* 'Pinnacle'**, syn. *M. aquifolium* 'Fascicularis', *M. pinnata* of gardens. Upright, evergreen shrub. H and S 5ft (1.5m). Has bronze young leaves, maturing to bright green, with sharply toothed, dull to dark green leaflets. Dense clusters of yellow flowers open in spring, followed by white-frosted, blue-black berries. Z5–8. **'Undulata'** (syn. *M.* 'Undulata') H and S 6ft (2m) has glossy, dark green leaves, each with hollylike, wavy-edged leaflets that turn red-purple in winter. Bears deep yellow flowers.

MAIANTHEMUM

SYN. SMILACINA
False Solomon's seal, May lily

LILIACEAE/CONVALLARIACEAE

Genus of perennials with extensive, clump-forming or spreading rhizomes, grown for their sprays of often scented flowers. Useful as groundcover in woodlands and wild areas. Fully hardy to frost tender. Prefers a position in shade and humus-rich, moist, sandy, neutral to acidic soil. Propagate by seed in fall or division in early spring.
M. bifolium illus. p.348.
M. canadense. Vigorous, ground-cover, spreading perennial. H 10cm (4in), S indefinite. Has pairs of large, upright, ovate, glossy leaves. Slender stems bear sprays of small, white flowers in early summer, followed by green mottled berries that ripen to red. Z3–8
M. racemosum, syn. *Smilacina racemosa* (False spikenard), illus. p.223.

MAIHUENIA

CACTACEAE

Genus of slow-growing, summer-flowering, alpine cacti, clump-forming with age, with cylindrical or round stems. Half hardy. Requires dappled shade or full sun and well-drained soil. Protect from winter rain. Propagate by seed or stem cuttings in spring or summer.
M. poeppigii illus. p.490.

MALCOLMIA

BRASSICACEAE/CRUCIFERAE

Genus of spring- to fall-flowering annuals and perennials. Frost hardy. Grow in sun and in fertile, well-drained soil. Propagate by seed sown outdoors in spring, summer or early fall. Self-seeds freely.
M. maritima (Virginian stock) illus. p.304.

MALEPHORA

AIZOACEAE

Genus of prostrate to erect, woody-based, perennial succulents with semicylindrical or bluntly 3-angled leaves. Frost tender. Star-shaped flowers open from late summer to fall, in daytime. Needs sun and very well-drained soil. Propagate by seed or stem cuttings in spring or summer.
M. crocea illus. p.496.

MALOPE

MALVACEAE

Genus of annuals and perennials, grown for their showy flowers that are ideal for cutting. Borderline hardy to fully hardy. Grow in sun and in fertile, well-drained soil. Propagate by seed sown outdoors in spring. Self-seeds freely.
M. trifida (Annual mallow) illus. p.305.

MALUS

Apple, Crab apple

ROSACEAE

Genus of deciduous, mainly spring-flowering trees and shrubs, grown for their shallowly cup-shaped flowers, fruits, foliage or fall color. Crab apples may be used to make preserves. Fully hardy. Prefers full sun, but tolerates partial shade; grows in any but waterlogged soil. In winter, cut out dead or diseased wood and prune to maintain a balanced branch system. Propagate by budding in late summer or by grafting in midwinter. Trees are sometimes attacked by aphids, caterpillars, and red spider mite, and are susceptible to fireblight and apple scab.
***M.* 'Adirondack'**, syn. *M.* Admiration. Slow-growing, deciduous, narrowly upright tree. H 12ft (4m), S 6ft (2m). Has ovate, leathery, dark green leaves. Carmine-red buds open to red-tinged, white flowers in mid- to late spring, followed by small, long-lasting, roundish, red fruits on red stalks. Z4–8
***M.* Admiration.** See *M.* 'Adirondack'.
M. baccata (Siberian crab apple). Deciduous, rounded tree. H and S 50ft (15m). Has ovate, dark green leaves and produces a profusion of single, white flowers from mid- to late spring, followed by tiny, rounded, red or yellow crab apples in fall. H6. **var. *mandschurica*** (Manchurian crab apple) illus. p.69.
***M. brevipes* 'Wedding Bouquet'.** Deciduous, compact, wide-spreading tree or shrub. H 10–12ft (3–4m), S 12–15ft (4–5m). Has ovate to oblong, finely toothed, dark green leaves. Abundant clusters of saucer-shaped, pure white flowers are borne in late spring, followed by roundish, bright red fruits, which last into winter. Z4–8
***M.* 'Butterball'** illus. p.92.
***M.* 'Comptesse de Paris'.** Small, broadly conical tree. H 15ft (5m), S 12ft (4m). Has variable, wavy-margined, occasionally lobed, mid-green leaves. Pure white flowers open from pink buds in mid- to late spring, followed by long-stalked, small, lemon-shaped, clear yellow fruits that remain on branches to mid-winter. Z4–8
M. bhutanica, syn. *M. toringoides*. Deciduous, spreading tree. H 25ft (8m), S 30ft (10m). Ovate to lance-shaped, usually deeply lobed, glossy, mid-green leaves turn yellow in fall. Bears single, white flowers in late spring, and rounded or egg-shaped, red-flushed, yellow crab apples in fall. Z4–8
***M. coronaria* 'Charlottae'**. Spreading tree. H and S 28ft (9m). Broadly ovate, lobed or deeply toothed leaves are tinged red when young, then dark green, and turning red and orange in fall. Semidouble, pale pink flowers open in late spring. Z4–8
***M.* 'Cowichan'** illus. p.90.
***M.* 'Evereste'.** Conical tree. H 22ft (7m), S 20ft (6m). Has ovate, sometimes lobed, dark green leaves. White flowers are freely borne from red buds in late spring. Red-flushed, orange-yellow fruits follow. Z4–8
M.* x *floribunda (Japanese crab apple) illus. p.84.
M. hupehensis (Hupeh crab) illus. p.69.
***M.* Jelly ing ('Mattfru').** Compact, round-headed, small tree. H and S 12ft (4m). Has broadly ovate, mid-green leaves. Produces abundant, fragrant, pure white flowers in mid- to late spring. The attractive, orange-pink, roundish fruits persist until early winter. Self-fertile; used as a universal pollinator for orchard and other crab apples. Disease resistant and fruits are good for making jelly. Z4–8
***M.* 'John Downie'** illus. p.91.
***M.* 'Laura'.** Slow-growing, columnar tree with erect branches. H 6ft (2m), S 2ft (0.6m). Has ovate, occasionally lobed leaves, dark purple when young, turning dark reddish-green with red veins by midsummer. Bears pink and white flowers in mid-spring, followed by long-lasting, large, roundish, maroon-red fruits. Self-fertile. Ideal for containers; fruits make good jelly. Z4–8
***M.* x *moerlandsii* 'Profusion'.** See *M.* 'Profusion'.
***M.* 'Neville Copeman'**, syn. *M.* x *purpurea* 'Neville Copeman'. Spreading tree. H and S 28ft (9m). Ovate, dark green leaves are purplish-red when young. Single, dark purplish-pink flowers are borne from mid- to late spring; these are followed by rounded, orange-red to carmine crab apples. Z4–8
M. niedzwetskyana, syn. *M. pumila* var. *niedzwetskyana*. Spreading tree. H 20ft (6m), S 25ft (8m). Ovate leaves are red when young, later purple. Produces clusters of single, deep reddish-purple flowers in late spring, then very large, conical, reddish-purple crab apples. Z4–8
M. prattii. Upright when young, later spreading tree. H and S 30ft (10m). Ovate, red-stalked, glossy, mid-green leaves become orange and red in fall. Single, white flowers in late spring are followed by small, rounded or egg-shaped, white-flecked, red crab apples. Z4–8
***M.* 'Princeton Cardinal'** Vigorous, spreading, small, tree. H and S 15–20ft (5–6m). Has broadly ovate, glossy leaves, purplish-red when young, maturing to dark green, reddish beneath. Bears vivid, pinkish-red flowers in early spring, followed by small, round, purple fruits. Disease resistant. Z4–8
***M.* 'Professor Sprenger'** illus. p.91.
***M.* 'Profusion'**, syn. *M.* x *moerlandsii* 'Profusion', illus. p.71.
M. pumila* var. *niedzwetskyana. See *M. niedzwetskyana*.
***M.* x *purpurea* 'Neville Copeman.'** See *M.* 'Neville Copeman'.
***M.* 'Red Jade'.** Weeping tree. H 12ft (4m), S 20ft (6m). Ovate leaves are dark green. In late spring, bears single, white flowers, sometimes pale pink-flushed, then long-lasting, rounded to egg-shaped, red crab apples. Z4–8
M.* x *robusta. Vigorous, deciduous, spreading tree. H 40ft (12m), S 30ft (10m). Has ovate, dark green leaves. Bears profuse, single, white or pink flowers

above ovate, dark green leaves in late spring. These are followed by long-lasting, rounded, yellow or red crab apples. Z4–8.
'Red Sentinel', H and S 22ft (7m), is broadly upright. Bears white flowers in late spring, and long-lasting, yellow-flushed red, later glossy, dark red fruits. **'Yellow Siberian'** has white flowers, sometimes pink-tinged, and yellow crab apples.
***M.* 'Royalty'** illus. p.84.
M. sargentii, syn. *M. toringo* subsp. *sargentii*, illus. p.110.
***M.* x *scheidekeri* 'Red Jade'**. See *M.* 'Red Jade'.
M. sieboldii. See *M. toringo.*
***M.* 'Snowcloud'** illus. p.81.
***M.* 'Sun Rival'.** Semiweeping, umbrella-shaped, small tree, with arching branches. H and S 10ft (3m). In mid-spring, clusters of red buds open to white-tinged, pink flowers. Small, round, red fruits last into winter. Very attractive to bees and birds. Z4–8
M. toringo* 'Scarlett'.** Small, round-headed tree. H and S 20–25ft (6–8m). Has handsome, deeply lobed leaves, which emerge wine-red and age to deep green, reddish beneath; fall color may vary from yellow to orange and red. Bears abundant, mauve-pink flowers, followed by persistent, small, round, dark red fruits. H6. **subsp. *sargentii see *M. sargentii.*
M. toringoides. See *M. bhutanica*.
M. transitoria. Deciduous, spreading, elegant tree. H 25ft (8m), S 30ft (10m). Oblong to deeply 3-lobed, mid-green leaves turn yellow in fall. Produces abundant, single, white flowers in late spring, followed by very small, pealike, pale yellow crab apples. Z4–8
M. trilobata. Deciduous, conical tree. H 50ft (15m), S 22ft (7m). Has maplelike, lobed, glossy, bright green leaves that often become brightly colored in fall. Bears single, white flowers in early summer, followed by small, rounded or pear-shaped, red-flushed green fruits. Z4–8
M. tschonoskii illus. p.77.
***M.* 'Van Eseltine'.** Deciduous, upright tree. H 20ft (6m), S 12ft (4m). Has ovate, dark green leaves. Bears double, pink flowers in late spring and rounded, red-flushed, yellow crab apples in fall. Z4–8
***M.* 'Veitch's Scarlet'** illus. p.89.
***M.* x zumi 'Calocarpa'.** Upright, pyramidal to rounded tree. H 28ft (9m), S 25ft (8m). Has ovate, often deeply lobed, dark green leaves. White flowers open from pink buds in late spring, followed by long-lasting, cherrylike, red fruits. Z4–8

MALVA

Mallow

MALVACEAE

Genus of annuals, biennials and free-flowering, short-lived perennials. Fully hardy. Requires sun and fertile, moist but well-drained soil. Propagate species by seed in early spring or early summer, selected forms by cuttings from firm, basal shoots in late spring or summer. These shoots may be encouraged by cutting the plant back after first flowers have faded.
M. moschata (Musk mallow) illus. p.232.
f. *alba* is an upright, bushy, woody-based perennial. H 3ft (90cm), S 2ft (60cm). Has slightly musk-scented leaves; lower ones heart-shaped, upper ones finely divided. In summer, bears axillary clusters of saucer-shaped, white flowers. Z3–8

Malvastrum capensis. See *Anisodontea capensis.*

MALVAVISCUS

MALVACEAE

Genus of evergreen shrubs and trees, grown for their flowers. Frost tender. Needs a site in full light and fertile, well-drained soil. Water containerized plants freely during growing season, moderately at other times. To maintain shape, flowered stems may be cut back hard in late winter. Propagate by seed in spring or by semiripe cuttings in summer. Whitefly and red spider mite may be troublesome.
M. arboreus (Sleepy mallow). Vigorous, evergreen, rounded shrub. H to 12ft (4m) or more, S 5–10ft (1.5–3m). Serrated, bright green leaves are soft-haired. Has bright red flowers with protruding stamens in summer and fall. Z10–11

MAMMILLARIA

CACTACEAE

Genus of spherical to cylindrical or columnar cacti, grown for their funnel-shaped flowers that develop mainly in rings around the crowns. Flowers, offsets, and long, slender to spherical seed pods grow between tubercles on a spiny, green stem with extended areoles. Frost tender. Requires full sun and very well-drained soil. Keep completely dry in winter, otherwise plants rot easily. Propagate by seed in late winter or early spring.
M. bocasana (Snowball cactus) illus. p.480.
M. candida, syn. *Mammilloydia candida* (Snowball cushion cactus). Slow-growing, solitary or clump-forming, perennial cactus. H and S 6in (15cm). Columnar, green stem is densely covered with short, stiff, white spines. Bears white-edged, rose flowers, ½–¾in (1–2cm) across, in spring. Water sparingly in summer. Z10–11 (min. 41°F/5°C)
M. centricirrha. See *M. magnimamma.*
M. conoidea. See *Neolloydia conoidea.*
M. dealbata. See *M. haageana*.
M. densispina. Slow-growing, solitary perennial cactus. H and S 4in (10cm). Spherical or cylindrical, dark green stems have white-woolly areoles with yellow or pale brown radial spines and 5 or 6 reddish brown, black-tipped centrals. From spring to summer, bears sulphur-yellow flowers, often with red-flushed outer petals, ¾in (2cm) long. Z10–11 (min. 34°F/1°C)
M. elongata (Gold lace cactus) illus. p.494.
M. geminispina illus. p.480.
M. gracilis. See *M. vetula* subsp. *gracilis*.
M. haageana, syn. *M. dealbata*. Spherical to columnar, perennial cactus, offsetting from the base and sides. H 1ft (30cm), S 8in (20cm). Spherical to cylindrical, mid-green stems have short, thin, white radial spines and longer, black-tipped, red-brown centrals. Bears bright red flowers, ½in (1cm) across, in spring. Z10–11 (min. 34°F/1°C)
M. hahniana (Old lady cactus) illus. p.479.
M. magnimamma, syn. *M. centricirrha.* Very variable, clump-forming, perennial cactus. H 1ft (30cm), S 2ft (60cm). Gray-green stems have pronounced, angular, dark green tubercles with white spines of variable length. Bears cream, pink, or red flowers, in spring and possibly again in late summer. Z10–11 (min. 34°F/1°C)
M. microhelia illus. p.491.
M. plumosa illus. p.483.
M. prolifera (Strawberry cactus). Clump-forming, perennial cactus. H 4in (10cm), S 1ft (30cm). Green stem have dense, golden to white spines. Bears abundant, cream or yellow flowers, 1–2cm (½–¾in) across, in summer, followed by edible red berries that taste like strawberries. Z10–11 (min. 1°C/34°F)
M. rhodantha. Spherical to columnar, perennial cactus. H and S 2ft (60cm). Green stem, branching from crown with age, is densely covered with white to brown and yellow spines, often curved. In summer, produces purplish-pink flowers, ¾in (2cm) long. Z10–11 (min. 34°F/1°C)
M. schiedeana. Solitary or clump-forming, perennial cactus. H 4in (10cm), S 1ft (30cm). The green stem is covered with short, feathery, yellow spines that turn white. Produces cream flowers and narrow, red seed pods from summer to fall. Z10–11 (min. 34°F/1°C)
M. sempervivi illus. p.484.
M. vetula* subsp. *gracilis, syn. *M. gracilis*. Clump-forming, perennial cactus. H 2in (5cm), S 8in (20cm). Produces a columnar, green stem, densely covered with brown and yellowish-white spines. From spring to summer, bears pale cream flowers, ½–¾in (1–2cm) across. Stem is shallow-rooted and reroots readily. Z10–11 (min. 34°F/1°C).
var. *fragilis*, H 1½in (4cm), is more fragile and has off-white spines.
M. zeilmanniana (Rose pincushion) illus. p.486.

Mammilloydia candida. See *Mammillaria candida*.

MANDEVILLA

SYN. DIPLADENIA

APOCYNACEAE

Genus of evergreen, semievergreen, or deciduous, woody-stemmed, twining climbers, with some perennials, grown for their large, trumpet-shaped flowers. Frost tender. Grow in any well-drained soil, with light shade in summer. Water freely in full growth, sparingly at other times. Provide support; thin out and spur back congested growth in early spring. Propagate by seed in spring or by semiripe cuttings in summer. Whitefly and red spider mite may cause problems. ⓘ Contact with the sap may cause skin irritation, and all parts may cause mild stomach upset if ingested.
***M.* x *amabilis* 'Alice du Pont'**, syn. *M.* x *amoena* 'Alice du Pont', illus. p.461.
***M.* x *amoena* 'Alice du Pont'.** See *M.* x *amabilis* 'Alice du Pont'.
M. boliviensis, syn. *Dipladenia boliviensis.* Vigorous, evergreen, woody-stemmed, twining climber. H to 12ft (4m). Oblong, pointed leaves are lustrous green. Has large, trumpet-shaped, white flowers with gold eyes in small clusters in summer. Z10–12 (min. 50°F/10°C)
M. laxa, syn. *M. suaveolens*, *M. tweediana* (Chilean jasmine). Fast-growing, deciduous or semievergreen, woody-stemmed, twining climber. H 15ft (5m) or more. Ovate leaves have heart-shaped bases. Clusters of fragrant, white flowers open in summer to early fall. Z10–11 (min. 41°F/5°C)
M. splendens, syn. *Dipladenia splendens*, illus. p.460.
M. suaveolens. See *M. laxa.*
M. tweediana. See *M. laxa.*

MANDRAGORA

Mandrake

SOLANACEAE

Genus of rosetted perennials with large, deep, fleshy roots. Frost hardy. Requires a position in sun or partial shade, and deep, humus-rich, well-drained soil. Resents being transplanted. Propagate by seed in fall. ⓘ Alkaloids in the plant may be harmful if ingested.
M. officinarum (Common mandrake, Devil's apple) illus. p.356.

MANETTIA

RUBIACEAE

Genus of evergreen perennials and woody-stemmed, twining climbers, grown for their small, showy flowers. Frost tender. Grow in humus-rich, well-drained soil, with partial shade in summer. Water regularly, sparingly in low temperatures. Stems need support. Cut back if required in spring. Propagate by softwood or semiripe cuttings in summer. Whitefly is sometimes a problem.
M. bicolor. See *M. luteorubra.*
M. cordifolia (Firecracker vine). Fast-growing, evergreen, soft-stemmed, twining climber. H 6ft (2m) or more. Has oblong, lance-shaped or narrowly heart-shaped, glossy leaves. Funnel-shaped, red flowers, sometimes yellow-flushed on the lobes, are borne in small clusters in summer. Z10–12 (min. 45°F/7°C)
M. inflata. See *M. luteorubra.*
M. luteorubra, syn. *M. bicolor*, *M. inflata* (Brazilian firecracker). Evergreen, fast-growing, semiwoody-stemmed, twining climber. H 6ft (2m). Has slightly sticky, hairy stems and glossy leaves. Produces small, funnel-shaped, red flowers, with yellow tips, in summer. Z10–12 (min. 45°F/7°C)

Manfreda maculosa. See *Agave maculosa*.
Manglietia. See *Magnolia.*
Manglietia fordiana. See *Magnolia fordiana.*
Manglietia insignis. See *Magnolia insignis.*

MARANTA

MARANTACEAE

Genus of evergreen, rhizomatous perennials, grown for their distinctively patterned, colored foliage. Frost tender. Needs constant, high humidity and a shaded position away from drafts or wind. Grow in humus-rich, well-drained soil. Propagate by division or by stem cuttings in spring.
M. leuconeura (Prayer plant).
'Erythroneura' (syn. *M.l.* 'Erythrophylla'; Herringbone plant) illus. p.475.

'Erythrophylla' see *M.l.* 'Erythroneura'.
'Kerchoveana' (Rabbit's tracks) illus. p.475. **'Massangeana'** is an evergreen, short-stemmed perennial, branching at the base. H and S 1ft (30cm). Each large, oblong, velvety, dark green leaf has a wide, irregular, pale midrib, white, lateral veins, is often purplish-green below; they stand upright at night, but lie flat during the day. Small, white to mauve flowers are produced in slender, upright spikes year-round. Z12 (min. 59°F/15°C)

Marginatocereus marginatus. See *Pachycereus marginatus.*

MARGYRICARPUS

ROSACEAE

Genus of dwarf, evergreen shrubs, grown for their fruits. Good for rock gardens. Frost hardy. Needs a sheltered, sunny position and well-drained soil. Propagate by softwood cuttings in late spring or early summer or by seed in fall.
M. pinnatus, syn. *M. setosus* (Pearl berry). Evergreen, prostrate shrub. H 9–12in (23–30cm), S 3ft (1m). Dark green leaves are divided into linear, silky leaflets. In early summer, produces inconspicuous, green flowers, then small, round, glossy, purple-tinted, white fruits. Z8–10 to Z9–11
M. setosus. See *M. pinnatus.*

MARTYNIA

MARTYNIACEAE

Genus of annuals, grown for their tubular, pale pink flowers and horned fruits. Half hardy. Requires a sunny, sheltered site and fertile, well-drained soil. Propagate by seed sown under glass in early spring.
M. annua (Unicorn plant) illus. p.300.

MASDEVALLIA

ORCHIDACEAE

See also ORCHIDS.
M. coccinea (illus. p.466). Evergreen, terrestrial orchid for a cool greenhouse. H 6in (15cm). Has oblong to lance-shaped leaves, to 8in (20cm) long. Bears white and yellow, red-orange, crimson, or purple-pink flowers, 3in (8cm) long, in summer. Needs shade in summer. Z11–12 (min. 52°F/11°C; max. 75°F/24°C)
M. infracta. Evergreen, epiphytic orchid for a cool greenhouse. H 6in (15cm). Has oblong to lance-shaped leaves, to 5½in (14cm) long. Bears rounded, yellow-flushed, red to purplish-pink flowers, 2in (5cm) long, with taillike, greenish sepals, in summer. Requires a position in shade from hot summer sun. Z11–12 (min. 52°F/11°C; max. 75°F/24°C)
M. tovarensis (illus. p.466). Evergreen, epiphytic orchid for a cool greenhouse. H 6in (15cm). Has oblong to lance-shaped leaves, to 6in (15cm) long. In winter, milky-white flowers, 1½in (4cm) long, with short-tailed sepals, singly or up to 3 to a stem. Grow in shade in summer. Z11–12 (min. 52°F/11°C; max. 75°F/24°C)
M. wageneriana (illus. p.467). Evergreen, epiphytic orchid for a cool greenhouse. H 3in (8cm). Narrowly ovate leaves are 4in (10cm) long. Produces pale yellow flowers, 1½in (4cm) long, with taillike sepals, singly or in pairs, in summer. Needs a position in shade in summer. Z10–11

MATHIASELLA

APIACEAE

Genus of one species of perennial, grown for its umbels of bell-shaped, green flowers. Fully hardy. Needs sun and soil that is well-drained, especially in winter.
***M. bupleuroides* 'Green Dream'** illus. p.242.

MATTEUCCIA

ONOCLEACEAE

Genus of deciduous, rhizomatous ferns. Fully hardy. Prefers partial shade and moist soil. Remove faded fronds regularly and divide plants when crowded. Propagate by division in early spring.
M. orientalis. Deciduous, rhizomatous fern. H and S to 3ft (1m). Has a "shuttlecock" of sterile, arching, broadly ovate, divided fronds, to 32in (80cm) long, light green when young, becoming darker. Fertile, erect, blackish-green fronds emerge from the center of the plant in summer. Z4–8
M. struthiopteris (Ostrich-feather fern, Ostrich fern) illus. p.443.

MATTHIOLA

Gillyflower, Stock

BRASSICACEAE/CRUCIFERAE

Genus of bushy, erect annuals, biennials, and perennials, occasionally subshrubs. Flowers of most annual or biennial stocks are highly scented and excellent for cutting. Fully hardy to frost hardy. Grow in sun and in fertile, well-drained, ideally lime-rich soil. Tall cultivars may need support. If grown as biennials outdoors, provide cloche protection in winter. For flowers outdoors the same summer, sow seed of annuals under glass in early spring, or outdoors in mid-spring. Sow seed of perennials under glass in spring or summer. Propagate subshrubs by semiripe cuttings in summer. Prone to aphids, flea beetle, club root, downy mildew, and botrytis.
M. bicornis. See *M. longipetala* subsp. *bicornis*.
M. incana (Gillyflower, Stock). Fast-growing, upright, bushy subshrub, or short-lived perennial, grown as an annual. H 1–2ft (30–60cm), S 1ft (30cm). Has lance-shaped, grayish-green leaves and, in summer, scented, fragrant, mauve, purple, violet, pink, or white flowers borne in spikes. (borderline) Z8–10. **Cinderella Series** cultivars, H 8–10in (20–25cm), S to 10in (25cm), have double, dark blue-purple, lavender-blue, red, rose-pink, silvery-blue, or white flowers. Flowers of **Excelsior Mammoth Column Series** cultivars, H to 30in (75cm), S to 1ft (30cm), are mostly double, pink, red, pale blue, or white. **Giant Excelsior Mix** illus. p.303 **Hot Cakes Mixed** cultivars, S 6–8in (15–20cm), are upright, with spikes of mainly double, white, cream, pink, rose-pink, or purple flowers. Cultivars in **Sentinel Series**, H to 30in (75cm), S to 1ft (30cm), have double flowers in hues including white, pink, carmine-red, and light to dark blue. **Sugar and Spice Mixed** cultivars are compact and bushy, with spikes of mainly double, white, pink, violet, or yellow flowers. **Ten Week Mixed** cultivars, H 1ft (30cm), S to 10in (25cm), bear mainly double flowers in shades of crimson, pink, lavender-pink, purple, and white. **Vintage Mixed** is sturdy and branching, H 16in (40cm), S 1ft (30cm), bearing spikes of single or double flowers in burgundy red, copper orange, lavender, red, white, yellow, and rich crimson pink.
M. longipetala* subsp. *bicornis, syn. *M. bicornis* (Night-scented stock). Erect to spreading, single-stemmed to branching annual. H 12–14in (30–35cm), S 9in (23cm). Has narrow, sometimes divided, gray-green leaves. In summer, produces open spikes of pink, mauve, or purple flowers that are strongly fragrant at night. Z9–10

MATUCANA

CACTACEAE

Genus of low-growing, spherical to shortly cylindrical, solitary to clustering, perennial cacti, with thick, ribbed stems, often with some spines, usually branching from the base. Solitary, narrowly funnel-shaped yellow, orange or red flowers are produced around the stem tips in summer. Frost tender. Needs full sun and very well-drained, slightly alkaline soil. Propagate by seed in spring or summer.
M aurantiaca, syn. *Oreocereus aurantiacus*. Very variable, spherical to shortly cylindrical, perennial cactus. H 5in (12cm), S 16in (40cm). Has a 16-ribbed stem and elongated areoles each bear up to 25 spines. Bears orange-red or orange-yellow flowers in summer. Z10–11 (min. 41°F/5°C)
M. haynei, syn. *Oreocereus haynei*. Slow-growing, spherical to columnar, perennial cactus. H 2ft (60cm), S 4in (10cm). Produces a cylindrical, much-ribbed, grass-green stem, densely covered with short, white or yellowish-brown spines. Bears orange-brown, red, or purple-crimson flowers in summer on plants more than 6in (15cm) tall. Z10–11 (min. 41°F/5°C)

MAURANDYA

PLANTAGINACEAE/SCROPHULARIACEAE

Genus of twining, woody-based, perennial climbers, grown against a wall or to cover a trellis. Half hardy. Needs full sun and moderately fertile, moist but well-drained soil. Propagate by seed in spring, or softwood cuttings in late spring.
M. barclayana, syn. *Asarina barclayana*. Evergreen, soft-stemmed climber, herbaceous in cold climates. H to 6ft (2m). Has angular, heart-shaped, hairless leaves. Trumpet-shaped, white, pink, or purple flowers, each with a green or whitish throat, 2½–3in (6–7cm) long, are produced from summer to fall. Z10–11
M. erubescens. See *Lophospermum erubescens.*

MAXILLARIA

SYN. BRASILIORCHIS, MAXILLARIELLA

ORCHIDACEAE

See also ORCHIDS.
M. picta, syn. *Brasiliorchis picta*. Evergreen, epiphytic orchid for a cool greenhouse. H 9in (23cm). Has one narrowly ovate leaf, 6–9in (15–23cm) long. Fragrant, deep yellow to white flowers, marked purple to dark reddish-brown outside, are borne singly beneath foliage in winter. Requires partial shade in summer. Z11–12 (min. 50°F/10°C; max. 86°F/30°C)
M. porphyrostele, syn. *Brasiliorchis porphyrostele* (illus. p.467). Evergreen, epiphytic orchid for a cool greenhouse. H 3in (8cm). Has narrowly ovate leaves, 3in (8cm) long. Slightly fragrant, white- and red-lipped, yellow flowers, with purple-striped throats, are borne singly in summer and fall. Grow in good light in summer. Z10–11 (min. 50°F/10°C; max. 86°F/30°C)
M. tenuifolia. Evergreen, epiphytic orchid for a cool greenhouse. H 6in (15cm). Has narrowly ovate leaves, 6in (15cm) long. Fragrant, yellow flowers, heavily overlaid with red and with white lips, are borne singly throughout summer. Needs good light in summer. Z11–12 (min. 50°F/10°C; max. 86°F/30°C)

Maxillariella. See *Maxillaria.*

MAYTENUS

CELASTRACEAE

Genus of evergreen trees and shrubs, grown for their neat foliage. Fully hardy to frost tender, but needs shelter from strong, cold winds when young. Requires sun or partial shade and fertile, well-drained soil. Propagate by semiripe cuttings in summer or by suckers in spring.
M. boaria, syn. *M. chilensis* (Maiten). Evergreen, bushy-headed, elegant tree or shrub. H 70ft (20m), S 25ft (8m). Produces narrowly ovate to lance-shaped, glossy, dark green leaves on slender shoots, and tiny, star-shaped, green flowers in late spring. Z7–10
M. chilensis. See *M. boaria.*

MAZUS

PHRYMACEAE/SCROPHULARIACEAE

Genus of annuals and creeping, spring-flowering perennials. Useful for rock gardens and in paving. Borderline hardy to fully hardy. Needs a sheltered, sunny site and moist soil. Propagate by division in spring or by seed in spring or fall.
M. reptans illus. p.351.

MECONOPSIS

PAPAVERACEAE

Genus of annuals, biennials, and deciduous or evergreen perennials, some long-lived, some short-lived and others monocarpic (dying after flowering), grown for their flowers. Fully hardy. Needs shade and, in warm areas, a cool position. Most prefer humus-rich, moist, neutral to acidic soil. *M. baileyi* and *M.* 'Crewdson Hybrid' tolerate more alkaline soil. Propagate sterile perennial hybrids and perennial species by division in late summer or early spring. Propagate fertile species and hybrids (which set viable seed) by seed in spring. Division of perennial species and cultivars is advisable every 3 years.
M. baileyi, syn. *M. betonicifolia* of gardens (Himalayan blue poppy, Tibetan blue poppy). Clump-forming, deciduous perennial. H 3–4ft (1–1.2m), S 1½ft (45cm). Oblong to ovate, hairy, mid-green leaves, with heart-shaped bases, are produced in

basal rosettes and in decreasing size up flowering stems. Bears clusters of cup-shaped, bright blue, sometimes white or purple-blue, flowers in early summer. Z5–7.
var. alba (illus. p.218), H 4–5ft (1.2–1.5m), S 1½–2ft (45–60cm), has pure white flowers.
***M. betonicifolia* of gardens**. See *M. baileyi*.
M. cambrica. See *Papaver cambricum*.
***M.* x *cookei* 'Old Rose'** (illus. p.218). Clump-forming, long-lived perennial. H 1½ft (45cm), S 1ft (30cm). Produces numerous pendent, cup-shaped, deep pink flowers in late spring and early summer. Has basal rosettes of ovate to oblong, bristly, mid-green leaves. Does not produce viable seed. Z5–7
***M.* Fertile Blue Group 'Lingholm'** (illus. p.218). Clump-forming perennial. H 4–5ft (1.2–1.5m), S 1½–2ft (45–60cm). In early summer, bears clusters of shallow cup-shaped, sky-blue flowers. Has rosettes of oblong to ovate to lance-shaped, slightly toothed, hairy, mid-green leaves. Divide every 3 years to maintain vigor. Z5–7
M. grandis (Himalayan blue poppy; illus. p.218). Erect perennial. H 3–5ft (1–1.5m), S 1ft (30cm). Has basal rosettes of oblong, slightly toothed, hairy, mid-green leaves. In early summer, stout stems bear slightly nodding, cup-shaped, deep blue flowers. Z5–7
***M.* Infertile Blue Group 'Crewdson Hybrid'** (illus. p.218). Clump-forming, long-lived perennial. H 3–4ft (1–1.2m), S 1½–2ft (45–60cm). In early summer bears clusters of funnel- to cup-shaped, clear deep blue flowers. Has rosettes of oblong, hairy, mid-green leaves with a brownish tinge and scalloped edges. Z5–7
***M.* Infertile Blue Group 'Slieve Donard'** (illus. p.218). Clump-forming, long-lived perennial. H 4–5ft (1.2–1.5m), S 1½–2ft (45–60cm). In early summer, bears clusters of shallow, cup-shaped, sky-blue flowers. Has rosettes of oblong to ovate, hairy, mid-green leaves with marginal teeth absent or very few and tiny. Fertile seed is not produced. Z5–7
M. integrifolia. Monocarpic, deciduous perennial. H 1½–2ft (45–60cm), S 2ft (60cm). Bears spikes of large, cup-shaped, pale yellow flowers from late spring to midsummer. Has rosettes of large, linear to oblong, hairy, pale green leaves. Z5–7
***M.* George Sherriff Group 'Jimmy Bayne'** (illus. p.218). Rhizomatous, long-lived perennial. H to 5ft (1.5m), S 1½–2ft (45–60cm). In early summer, bears clusters of shallowly bowl-shaped flowers, deep blue or with a purplish tinge. Has rosettes of ovate to lance-shaped, hairy, mid-green leaves, edged with rounded teeth. Z5–7
***M.* 'Marit'** (illus. p.218). Clump-forming, long-lived perennial. H 4–5ft (1.2–1.5m), S 1½–2ft (45–60cm). In early summer, bears clusters of cup-shaped, white to pale creamy-white flowers. Has rosettes of oblong to lance-shaped, hairy, mid-green leaves with regular and neatly toothed edges. Divide every 3 years to maintain vigor. Seed is not produced. Z5–7
***M. napaulensis* of gardens** (illus. p.218). Clump-forming, short-lived perennial that dies after flowering. H 5ft (1.5m), S 2ft (60cm). Produces sprays of nodding, shallowly cup-shaped, yellow, pink, red, or white flowers from late spring to midsummer. Bears large rosettes of oblong to lance-shaped, deeply lobed and cut, hairy, yellowish-green leaves. Z5–7
M. quintuplinervia (Harebell poppy). Mat-forming, deciduous perennial. H 1–1½ft (30–45cm), S 1ft (30cm). Cup-shaped, nodding, lavender-blue flowers, deepening to purple at the bases, are borne singly on hairy stems, from late spring to late summer, above a dense mat of large, oblong to lance-shaped, mid-green leaves. Seed is very difficult to germinate. Z5–7

MEDICAGO
Medick

PAPILIONACEAE/LEGUMINOSAE

Genus of annuals, perennials, and evergreen shrubs, grown for their pealike flowers. Very wind resistent; good in mild, coastal areas. Fully hardy to frost hardy, but in cold areas plant against a warm, sunny wall. Requires sun and well-drained soil. Cut out dead wood in spring. Propagate shrubs by semiripe or softwood cuttings in summer, or by seed in fall or spring; annuals and perennials by seed in fall or spring.
M. arborea (Moon trefoil). Evergreen, bushy, dense shrub. H and S 6ft (2m). Bears clusters of small, pealike, yellow flowers from mid-spring to early fall, followed by curious, flattened, snaillike, green, then brown seed pods. Has dark green leaves, each with 3 narrowly triangular leaflets that are silky-haired when young. Z4–10

MEDINILLA

MELASTOMATACEAE

Genus of evergreen shrubs and scrambling climbers, some epiphytic, grown for their flowers and foliage. Frost tender. Needs partial shade and humus-rich, well-drained soil. Water potted plants freely when in full growth, moderately at other times. Propagate by greenwood cuttings in spring or summer.
M. magnifica illus. p.455.

MEEHANIA

LAMIACEAE/LABIATAE

Genus of clump-forming perennials with creeping stems, grown mainly as groundcover. Fully hardy. Prefers shade and well-drained, but not dry, humus-rich soil. May be propagated by seed, division, or stem cuttings in spring.
***M. urticifolia*.** Clump-forming, spreading perennial with long, creeping, leafy stems. H to 1ft (30cm), S indefinite. Ovate to triangular, toothed leaves are 4in (10cm) or more long on creeping stems—smaller on flowering stems. Whorls of fragrant, 2-lipped, purplish-blue flowers, to 2in (5cm) long, are borne in erect spikes in late spring and early summer. Z4–8

***Megasea*.** See *Bergenia*.

MELALEUCA
Paperbark

MYRTACEAE

Genus of evergreen, spring- and summer-flowering trees and shrubs, grown for their flowers and overall appearance. Frost hardy to frost tender. Needs full light and well-drained soil, preferably without much nitrogen. Some species tolerate waterlogged soils. Water containerized specimens moderately, less in low temperatures. Propagate by seed in spring or by semiripe cuttings in summer.
M. alternifolia (Tea tree). Large, bushy shrub or small tree. H 20ft (6m), S 12ft (4m). Has papery, gray-white bark and linear, smooth, mid-green leaves scattered irregularly or whorled on the stems. In summer, bears small, white flowers in dense spikes, 1¼–2in (3–5cm) long, followed by small, woody, cup-shaped fruits. Source of tea tree oil. Z9–11
M. armillaris (Bracelet honey myrtle). Evergreen, rounded, wiry-stemmed shrub or tree. H 10–20ft (3–6m), S 4–10ft (1.2–3m). Has needlelike, deep green leaves and, in summer, dense, bottlebrushlike clusters, 1¼–2½in (3–6cm) long, each flower a small brush of white stamens. Z10–11
***M. hypericifolia*.** Evergreen, rounded shrub or small tree. H and S 6–15ft (2–5m). Leaves are oblong to ovate and mid- to deep green above, paler beneath. Produces crimson flowers, comprising a ¾–1in (2–2.5cm) long brush of stamens of the same color, from spring to summer, mainly in bottlebrushlike spikes, 1½–3in (4–8cm) long. Z9–11
M. squarrosa (Scented paperbark). Evergreen, erect, wiry-stemmed shrub or tree. H 10–20ft (3–6m), S 6–12ft (2–4m). Has tiny, ovate, deep green leaves. Bears 1½in (4cm) long spikes of scented flowers, each comprising a tiny brush of cream stamens, in late spring and summer. Z9–11

MELAMPODIUM

ASTERACEAE

Genus of perennials useful for hanging baskets, containers, and summer bedding. Frost-tender. Prefers full sun in well-drained soil. Propagate by seed *in situ* in spring or early fall.
***M. montanum* Aztec Gold ('Starbini')**, syn. *Sanvitalia* Aztec Gold of gardens. Trailing perennial. H to 5in (12cm). Dark reddish-brown stems carry paired mid-green, lance-shaped leaves with bristly upper surfaces. From early summer to early fall, bears small, bright yellow, daisylike flowers at the stem tips. Z8–11

MELASTOMA

MELASTOMATACEAE

Genus of evergreen, mainly summer-flowering shrubs and trees, and a few perennials, grown for their flowers and foliage. Frost tender. Requires full light or partial shade and fertile, well-drained soil. Water containerized specimens freely in full growth, moderately at other times. Pruning is tolerated in late winter if needed. Propagate by seed in spring or softwood or greenwood cuttings in summer. Whitefly and red spider mite may cause problems.
***M. candidum*.** Evergreen, rounded, bristly-stemmed shrub. H and S 3–6ft (1–2m). Has ovate, leathery, bristly leaves and bears profuse small, terminal clusters of fragrant, 5–7-petaled, white or pink flowers in summer. Z11-12 (min. 55°F/13°C)

MELIA

MELIACEAE

Genus of deciduous or semievergreen spring-flowering trees and shrubs, grown for their foliage, flowers and fruits. Useful for very dry soil and does well in coastal gardens in mild areas. Frost tender. Needs a site in full sun; grows in any well-drained soil. Propagate by seed in spring.
M. azedarach (Bead-tree, Persian lilac) illus. p.71.

MELIANTHUS

MELIANTHACEAE

Genus of evergreen shrubs, grown mainly for their foliage. Frost hardy to frost tender. Grow in a border or as specimen plants; they are particularly well suited to coastal gardens. Requires sun and fertile, well-drained soil. Water containerized specimens freely in summer, moderately at other times. Long stems may be shortened in early spring. Propagate by seed in spring or by greenwood cuttings in late spring or early summer. Red spider mite may be troublesome.
M. major (Honeybush) illus. p.145.

MELICA
Melick

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
M. altissima (Siberian melic). Evergreen, tuft-forming, perennial grass. H 2ft (60cm), S 8in (20cm). Produces slender stems and pointed, linear, pale to mid-green leaves, rough beneath, 4–9in (10–23cm) long. In summer, pendent, green spikelets are produced in narrow, erect, one-sided panicles, 4–10in (10–25cm) long with densely flowered tips. Z4–8.
'Atropurpurea' illus. p.286.

MELICYTUS
syn. HYMENANTHERA

VIOLACEAE

Genus of evergreen or semievergreen shrubs, grown for their overall appearance and ornamental fruits. Borderline fully hardy to frost tender. Requires a position in full light or partial shade and in well-drained soil. Needs long, hot summers to flower and fruit well. Water potted plants moderately, less in winter. Pruning is tolerated if required. Propagate by seed in spring or semiripe cuttings in summer.
M. crassifolius, syn. *Hymenanthera crassifolia*. Evergreen, densely twiggy shrub of irregular outline. H and S to 4ft (1.2m). Bears narrowly ovate to oblong, leathery, mid-green leaves. Bears tiny, bell-shaped, 5-petaled, yellow flowers in late spring and early summer, followed by egg-shaped, purple fruits. Z5–9
M. ramiflorus (Mahoe, Whiteywood). Evergreen, spreading shrub or tree. H and S 20–30ft (6–10m). Bark is grayish-white. Has lance-shaped, bluntly serrated, bright green leaves. In summer, bears small, rounded, greenish flowers in axillary clusters, followed by tiny, violet to purple-blue berries. Z9–11

MELINIS
syn. RHYNCHELYTRUM

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
M. repens, syn. *Rhynchelytrum repens*, *R. roseum* (Natal grass). Tuft-forming, annual or short-lived perennial grass. H 18–48in (45–120cm), S 24–36in (60–100cm). Leaves are mid-green, flat, and finely pointed. Produces loose panicles of awned, bright purple to rose-red spikelets from midsummer to early fall. Z10–11

MELIOSMA
SABIACEAE/MELIOSMACEAE

Genus of evergreen and deciduous trees and shrubs, grown for their habit, foliage, and flowers (which are not produced reliably). Fully hardy to frost hardy. Prefers full sun and deep, fertile, well-drained soil. Propagate by seed in fall.
M. oldhamii. See *M. pinnata* var. *oldhamii*.
M. pinnata* var. *oldhamii, syn. *M. oldhamii*. Deciduous, stout-branched tree, upright when young, spreading when mature. H 30ft (10m), S 20ft (6m). Has very large, dark green leaves divided into 5–13 ovate leaflets. Bears large clusters of small, fragrant, star-shaped, white flowers in early summer. Z8–10
M. veitchiorum illus. p.74.

MELITTIS
Bastard balm

LAMIACEAE/LABIATAE

Genus of one species of summer-flowering perennial, grown for its 2-lipped flowers. Fully hardy. Needs light shade and fertile, well-drained soil. Propagate by seed in fall or by division in spring.
M. melissophyllum illus. p.264.

MELOCACTUS
Turk's cap

CACTACEAE

Genus of spherical, rarely elongated, ribbed, perennial cacti that occasionally branch. On reaching flowering size, usually 6in (15cm) high, stems produce woolly crowns; then stems appear to stop growing while woolly crowns develop into columns. Has funnel-shaped flowers in summer, followed by elongated or rounded, red, pink, or white seed pods. Frost tender. Needs a site in full sun and extremely well-drained soil. Propagate by seed in spring.
M. actinacanthus. See *M. matanzanus*.
M. bahiensis. Spherical, perennial cactus. H and S 6in (15cm). Dull green stem bears 10–15 ribs. Produces stout, slightly curved, dark brown spines that become paler with age. Crown bears brown bristles and pink flowers, ½–¾in (1–2cm) across, in summer. Z12 (min. 61°F/16°C)
M. communis. See *M. intortus*.
M. curvispinus, syn. *M. oaxacensis*. Spherical to columnar, perennial cactus. H 8in (20cm), S 6in (15cm). Green stem has 10–15 rounded ribs. Areoles each bear 1–2 straight central spines and 8–12 curved radial spines. Flat, woolly crown bears deep pink flowers in summer. Z12 (min. 61°F/16°C)
M. intortus, syn. *M. communis* (Melon cactus), illus. p.494.
M. matanzanus, syn. *M. actinacanthus*. Spherical, perennial cactus. H and S 4in (10cm). Dark green stem has neat, short spines and develops a woolly crown about 5 years from seed. In summer, produces pink flowers, ½in (1cm) across. Z12 (min. 61°F/16°C)
M. oaxacensis. See *M. curvispinus*.

MENISPERMUM
Moonseed

MENISPERMACEAE

Genus of deciduous, sometimes semiwoody, twining, suckering climbers, grown for their attractive fruits that each contain a crescent-shaped seed—hence the common name. Male and female flowers are borne on separate plants; to produce fruits, plants of both sexes must be grown. Fully hardy. Grow in sun and in any well-drained soil. Propagate by seed in fall or suckers in fall or spring. ⓣ Fruits may cause severe discomfort if ingested.
M. canadense (Canada moonseed, Yellow parilla). Vigorous, deciduous, usually woody-stemmed, twining climber, producing a dense tangle of stems and spreading by underground suckers. H to 15ft (5m). Ovate to heart-shaped, rounded leaves are usually 3–7-lobed. Has small, cup-shaped, greenish-yellow flowers in summer, then poisonous, spherical, glossy, blackish fruits. Z4–8

MENTHA
Mint

LAMIACEAE/LABIATAE

Genus of rhizomatous perennials, some of which are semievergreen, rarely annuals, grown for their aromatic foliage, which is both decorative and used as a culinary herb. Plants are invasive, however, and should be used with caution. Fully hardy. Grow in a sunny or shady position and in well-drained soil. Propagate by division in spring or fall.
M. citrata. See *M.* x *piperita* f. *citrata*.
M. corsica. See *M. requienii*.
M. odorata. See *M.* x *piperita* f. *citrata*.
M.* x *piperita* f. *citrata, syn. *M. citrata, M. odorata, M. piperita* var. *citriodora,* (Eau-de-Cologne mint, Lemon mint) is a vigorous, spreading perennial. H 1–2ft (30–60cm), S 2ft (60cm). Reddish-green stems, bearing terminal spikes of small, 2-lipped, purple flowers in summer, arise from a carpet of ovate, slightly toothed, mid-green leaves that have a scent which is similar to *eau de Cologne*. Z4–9. **'Basil'** has peppermint- and basil-scented leaves. **'Chocolate'** has dark brown-flushed leaves that smell of peppermint and chocolate; excellent as a garnish for desserts. Leaves of **'Lime'** are slightly purple-flushed, with a lime scent.
M. piperita* var. *citriodora. See *M.* x *piperita* f. *citrata*.
M. requienii, syn. *M. corsica* (Corsican mint). Semievergreen, mat-forming, creeping perennial. H to ½in (1cm), S indefinite. When crushed, the rounded, bright apple-green leaves exude a strong peppermint scent. Bears tiny, stemless, lavender-purple flowers in summer. Suitable for a rock garden or paved path. Needs shade and moist soil. Z4-9
M. rotundifolia of gardens. See *M. suaveolens*.
M. spicata, syn. *M. viridis* (Spearmint). Spreading perennial. H to 3ft (1m), S indefinite. Aromatic, lance-shaped to ovate, toothed, bright green leaves, are sometimes hairy beneath. In summer, bears dense, cylindrical spikes of whorls of tiny, pink, lilac, or white flowers. Z3–7. **'Moroccan'** (Moroccan mint), H 16in (40cm), has very aromatic, mid-green leaves. **'Tashkent'**, H 32in (80cm), has ovate, strongly aromatic leaves; rust resistant.
M. suaveolens, syn. *M. rotundifolia* of gardens (Apple mint). **'Variegata'** (Variegated apple mint) illus. p.274.
M. viridis. See *M. spicata*.

MENTZELIA
Starflower

LOASACEAE

Genus of hairy, spreading to erect, freely branching, annuals, biennials, perennials, and evergreen subshrubs. Fully hardy to frost tender. Requires sun and fertile, very well-drained soil; tender species are best grown in pots under glass. Propagate by seed in spring; shrubs also by semiripe cuttings in summer.
M. lindleyi, syn. *Bartonia aurea* (Blazing star). Fairly fast-growing, bushy annual. H 1½ft (45cm), S 8in (20cm). Has fleshy stems and lance-shaped to ovate, serrated leaves. In summer, bears night-scented, cup-shaped, deep yellow flowers, flushed orange at the bases, with conspicuous stamens. Z5–10

MENYANTHES
MENYANTHACEAE

Genus of deciduous, perennial, marginal water plants, grown for their foliage and flowers. Fully hardy. Prefers an open, sunny position. Remove fading flower heads and foliage, and divide overcrowded clumps in spring. Propagate by seed in winter or divide rhizomes in summer.
M. trifoliata (Bog bean) illus. p.434.

Menziesia ciliicalyx* var. *purpurea. See *Rhododendron multiflorum* var. *purpureum*.

MERENDERA
COLCHICACEAE/LILIACEAE

Genus of bulbs grown for their foliage and flowers. Fully hardy to half hardy. Grow in a raised bed, alpine house, or bulb frame; *M. montana* is suitable for a sunny rock garden. Water moderately in the growing season. Plants require a hot, dry period of summer dormancy. Propagate by seed in spring or fall, or by offsets during summer dormancy.
M. bulbocodium. See *M. montana*.
M. caucasica. See *M. trigyna*.
M. eichleri. See *M. trigyna*.
M. montana, syn. *Colchicum montanum, M. bulbocodium, M. pyrenaica*. Fall-flowering bulb. H and S 5cm (2in). Has 3 or 4 linear, channeled leaves, to 9in (22cm) long, produced with or after the 1 or 2 upright, funnel-shaped, purple to red-purple flowers, sometimes with white bases. Z5–9
M. pyrenaica. See *M. montana*.
M. raddeana. See *M. trigyna*.
M. trigyna, syn. *Colchicum trigynum, M. caucasica, M. eichleri, M. raddeana*. Spring-flowering bulb. H and S 2in (5cm). Produces linear to lance-shaped leaves, to 7in (17cm) long, at the same time as 1–3 funnel-shaped, purple-pink to white flowers, with narrow petals. Z4–9

MERREMIA
CONVOLVULACEAE

Genus of deciduous, sometimes evergreen, woody, twining climbers, grown for their flowers and fruits. Frost tender. Prefers fertile, well-drained soil and full light. Water moderately, much less when not in full growth. Provide support. Thin out congested stems during spring. Propagate by seed in spring. Red spider mite may be a problem.
M. tuberosa, syn. *Ipomoea tuberosa, Operculina tuberosa* (Spanish morning glory, Wood rose, Yellow morning glory). Fast-growing, evergreen, twining climber. H 20ft (6m) or more. Leaves have 5-7 lobes. In summer, bears funnel-shaped, yellow flowers, followed by semiwoody, round, ivory-brown fruits. Z10–12 (min. 45–50°F/7–10°C)

MERTENSIA
BORAGINACEAE

Genus of clump- or mound-forming or prostrate perennials, grown for their funnel-shaped flowers. Fully hardy. Requires sun or shade and deep, well-drained soil. Propagate by division in spring or by seed in fall.
M. echioides. Clump-forming perennial. H 6–9in (15–23cm), S 6in (15cm). Has basal rosettes of long, ovate, hairy, blue-green leaves. Slender stems carry many open funnel-shaped, dark blue flowers in summer. Z6–9
M. maritima illus. p.356.
M. pulmonarioides. See *M. virginica*.
M. virginica, syn. *M. pulmonarioides*, illus. p.261.

MERWILLA
ASPARAGACEAE

Genus of bulbs (ranging from dwarf to tall) grown for their foliage and spikes of blue flowers produced in summer. Half-hardy to frost tender. Grows in well-drained soil in full sun. Propagate by division when dormant or by seed in fall.
M. plumbea, syn. *Scilla natalensis*. Clump-forming, summer-flowering bulb. H 12–48in (30–120cm), S 3in (8cm). Has lance-shaped, semierect, finely hairy basal leaves with a long spike of up to 100 small, flattish, pale violet-blue, pink or white flowers. Z10–11

MERYTA
ARALIACEAE

Genus of evergreen trees, grown for their handsome foliage. Frost tender. Requires full light or partial shade and humus-rich,

moisture-retentive but moderately drained soil. Water freely containerized plants in full growth, less at other times. Propagate by semiripe cuttings in summer or by seed when ripe in late summer.
M. sinclairii (Puka) illus. p.451.

***Mesembryanthemum cordifolium*.** See *Aptenia cordifolia*.
***Mesembryanthemum criniflorum*.** See *Cleretum bellidiforme*.
***Mesembryanthemum multiradiatum*.** See *Lampranthus roseus*.

MESPILUS
Medlar

ROSACEAE

Genus of one species of deciduous tree or shrub, grown for its habit, flowers, foliage, and edible fruits. Fully hardy. Requires sun or partial shade and fertile, well-drained soil. Propagate species by seed in fall and named forms (for fruit) by budding during late summer.
M. germanica illus. p.80. **'Nottingham'** is a compact tree or large shrub. H 20ft (6m), S 25ft (8m). Has lance-shaped to oblong-ovate, dark green leaves, yellow-brown in fall. In late spring and early summer, bears white, sometimes pink-tinged flowers. Produces heavy crops of brown fruit; self-fertile. Z5–8

METASEQUOIA

CUPRESSACEAE

See also CONIFERS.
M. glyptostroboides (Dawn redwood) illus. p.96.

METROSIDEROS
Pohutakawa, Rata

MYRTACEAE

Genus of dwart to tall, upright, evergreen, winter-flowering shrubs, trees, and scrambling climbers, grown for their flowers, the trees also for their overall appearance and for shade. Frost hardy to frost tender. Grows in fertile, well-drained soil and in full light. Water containerized specimens freely when in full growth, moderately at other times. Pruning is tolerated if needed. Propagate by seed in spring or by semiripe cuttings in summer.
M. excelsa, syn. *M. tomentosa* (New Zealand fire tree), illus. p.450.
M. robusta (Northern rata, Rata). Robust, evergreen, rounded tree, often epiphytic when young. H 70–80ft (20–25m) or more, S 30–50ft (10–15m). Oblong to elliptic, leathery leaves are dark green and lustrous. Has large clusters of flowers, which are mostly composed of long, dark red stamens, in summer. Z9–11
***M. tomentosa*.** See *M. excelsa*.

MEUM

APIACEAE/UMBELLIFERAE

Genus of clump-forming, summer-flowering perennials, grown for their aromatic leaves. Useful on banks and in wild gardens. Fully hardy. Needs sun and well-drained soil. Propagate by seed when fresh, in fall.
M. athamanticum (Baldmoney, Spignel). Upright perennial. H 6–18in (15–45cm), S 4–6in (10–15cm). Mainly basal and deeply dissected leaves have narrowly linear leaflets. In summer, produces flattish flower heads consisting of clusters of tiny, white or purplish-white flowers. Z6–9

***Michelia*.** See *Magnolia*.

MICROBIOTA

CUPRESSACEAE

See also CONIFERS.
M. decussata (illus. p.105). Spreading, coniferous shrub. H 20in (50cm), S 6–10ft (2–3m). Has green shoots, later turning red-brown, and produces flat sprays of tiny, scalelike, bright, mid-green leaves in symmetrical pairs. Leaves turn bronze in winter. Flowers are inconspicuous. Female, round, yellow-brown cones have only one seed. Z3–7

***Microglossa albescens*.** See *Aster albescens*.

MICROMERIA

LAMIACEAE/LABIATAE

Genus of annuals, perennials, and dwarf, evergreen shrubs, suitable for banks and rock gardens. Borderline fully hardy. Needs sun and well-drained soil. Propagate by seed in spring or by softwood cuttings in early summer.
***M. juliana*.** Evergreen, downy, bushy shrub. H and S 1ft (30cm). Small, ovate, aromatic, green leaves are pressed close to the stems. In summer, bears tiny, tubular, bright deep pink flowers in whorls on upper parts of stems. (borderline) Z5–8

MIKANIA

ASTERACEAE/COMPOSITAE

Genus of evergreen or deciduous, woody-stemmed or herbaceous, scrambling or twining climbers grown for their foliage and flower heads. Frost hardy to frost tender. Needs fertile, well-drained soil and partial shade in summer. Water regularly, less when not in full growth. Stem support is needed. Thin out congested growth in spring. Propagate by semiripe or softwood cuttings in spring. Susceptible to aphids.

M. scandens (Hemp vine). Twining climber, semi- or fully evergreen in tropical areas. H 10–15ft (3–5m). Ovate to triangular, mid-green leaves have 2 basal lobes. Tiny, groundsellike, vanilla-scented, usually white to flesh-pink, or pink to purple, or yellow-tinged white flower heads are borne in compact clusters in from late summer to late fall. Z10–12 (min. 41°F/5°C)

MILIUM

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
M. effusum **'Aureum'** (Bowles's golden grass, Golden wood millet). Semi-evergreen, tuft-forming, perennial grass. H 3ft (1m), S 1ft (30cm). Has flat, golden-yellow leaves. Produces open, tiered panicles of golden spikelets in summer. Self seeds readily in shady sites. Z5–9

MILLA

ALLIACEAE/LILIACEAE

Genus of summer-flowering bulbs, grown for their fragrant flowers, each comprising a slender tube with 6 star-shaped petals at the tip. Half hardy. Needs a sheltered, sunny position and well-drained soil. Plant in spring. After flowering, lift bulbs and partially dry off for winter. Propagate by seed or by offsets in spring.
***M. biflora*.** Summer-flowering bulb. H 1–1½ft (30–45cm), S 3–4in (8–10cm). Has long, narrow, semierect, basal leaves. Stem bears a loose head of 1–8 erect, white or white-flushed, pink or lilac flowers, 1¼–2½in (3–6cm) across, each on a long, slender stalk. Z10–11

MILTONIA

ORCHIDACEAE

See also ORCHIDS.
M. candida. Evergreen, epiphytic orchid for a cool or intermediate greenhouse. H 8in (20cm). Has narrowly ovate leaves, 4–5in (10–12cm) long, and spikes of cream or pink-lipped, greenish-yellow flowers, patterned chestnut-brown, 2in (5cm) across, in fall. Needs partial shade in summer. Z11–12 (min. 55°F/13°C; max. 86°F/30°C)
***M. clowesii*.** Evergreen, epiphytic orchid for an intermediate greenhouse. H 8in (20cm). Has broadly ovate leaves, 1ft (30cm) long. In fall, bears large spikes of yellow flowers, 1½in (4cm) across, barred with reddish-brown and with a white-and-mauve lip. Grow in partial shade in summer. Z11–12 (min. 55°F/13°C; max. 86°F/30°C)

MILTONIOPSIS
Pansy orchid

ORCHIDACEAE

See also ORCHIDS.
***M.* Anjou gx 'St. Patrick'** (illus. p.467). Evergreen, epiphytic orchid for a cool greenhouse. H 6in (15cm). Narrowly ovate, soft leaves are 4–5in (10–12cm) long. Has sprays of deep crimson flowers, 4in (10cm) across, with red-orange and white patterns on the lip, mainly in summer. Needs shade in summer. Z11–12 (min. 52°F/11°C; max. 75°F/24°C)
***M.* Robert Strauss gx 'Ardingly'** (illus. p.466). Evergreen, epiphytic orchid for a cool greenhouse. H 6in (15cm). Narrowly ovate, soft leaves are 4–5in (10–12cm) long. Bears sprays of white flowers, 4in (10cm) across, marked reddish-brown and purple, mainly in summer. Needs shade in summer. Z11–12 (min. 52°F/11°C; max. 75°F/24°C)

MIMOSA

MIMOSACEAE/LEGUMINOSAE

Genus of annuals, evergreen perennials, shrubs, trees, and scrambling climbers, cultivated for their flowers and foliage. *M. pudica* is usually grown as an annual. Frost tender. Needs partial shade and fertile, well-drained soil. Water potted specimens freely when in full growth, moderately at other times. Propagate by seed in spring, shrubs also by semiripe cuttings in summer. Red spider mite may be a nuisance.
M. pudica (Humble plant, Sensitive plant) illus. p.457.

MIMULUS
Monkey flower, Musk

PHRYMACEAE/SCROPHULARIACEAE

Genus of annuals, perennials, and evergreen shrubs. Small species suit damp pockets in rock gardens. Fully hardy to frost tender. Most prefer full sun and wet or moist soil; some require a dry site. Propagate perennials by division in spring, shrubs by softwood cuttings in late summer; annuals and all species by seed in fall or early spring.
***M.* 'Andean Nymph'.** See *M. naiandinus*.
M. aurantiacus. See *Diplacus aurantiacus*.
***M. cupreus* 'Whitecroft Scarlet'**, syn. *M.* 'Whitecroft Scarlet'. Short-lived, spreading perennial. H 8–12in (20–30cm), S 1ft (30cm). Has ovate, toothed, mid-green leaves. Bears snapdragonlike, scarlet flowers freely from early to late summer. Z8–10
***M. glutinosus*.** See *Diplacus aurantiacus*.
M. guttatus, syn. *M. langsdorffii*. Upright to spreading, mat-forming perennial. H and S 2ft (60cm). Ovate leaves are coarsely or sometimes deeply toothed and mid-green. Snapdragonlike, bright yellow flowers, spotted with reddish-brown on lower lobes, are produced in succession in summer and early fall. Z5–10
***M.* x *hybridus* cultivars.** Erect, basally branching, bushy, perennials, often grown as annuals. H 5–12in (12–30cm), S to 1ft (30cm). Ovate, toothed leaves are mid- to dark green. Tubular, open-mouthed, brightly colored, usually spotted flowers, with lobed lips, are borne in summer. Z6–9. **Magic Series** cultivars, H 6–8in (15–20cm), are early-flowering, with small flowers ranging in hue from bright orange, yellow, and red to more usual pastel shades and bicolors. **'Magic Yellow Blotch'** illus. p.322. **Maximus Series**, H and S to 10in (25cm), are vigorous and upright, with large flowers, 2½in (6cm) across, in a range of colors.
***M. langsdorffii*.** See *M. guttatus*.
***M. lewisii*.** Upright perennial. H 2ft (60cm), S 1½ft (45cm). Has downy, sticky, gray leaves that provide an excellent foil for snapdragonlike, deep rose-pink, sometimes white, flowers borne singly in summer. Z9–11
M. luteus (Monkey musk, Yellow monkey flower). Spreading perennial. H and S 1ft (30cm). Throughout summer, snapdragon-like, occasionally red-spotted, yellow flowers are freely produced above hairy, mid-green foliage. Z6–9
M. moschatus (Musk). Deciduous, prostrate, perennial, bog plant. H 4in (10cm), S 6in (15cm). Has ovate, hairy, pale green leaves. Small, pale yellow flowers, lightly speckled with brown, are borne in late summer. Z6–9
M. naiandinus, syn. *M.* 'Andean Nymph', illus. p.264.
M. ringens illus. p.441.
***M.* 'Royal Velvet'.** Compact perennial, often grown as an annual. H 1ft (30cm), S 9in (23cm). Leaves are mid-green. Bears many large, snapdragonlike, mahogany-

red flowers with mahogany-speckled, gold throats throughout summer. Z8–10
***M.* 'Whitecroft Scarlet'**. See *M. cupreus* 'Whitecroft Scarlet'.

***Mina*.** See *Ipomoea*.

MIRABILIS

NYCTAGINACEAE

Genus of summer-flowering annuals and tuberous perennials. Frost hardy to frost tender. Best grown in a sheltered position in fertile, well-drained soil and in full sun. Lift tubers and store over winter in frost-free conditions. Propagate by seed or division of tubers in early spring.
M. jalapa (Four o'clock flower, Marvel of Peru) illus. p.233.

MISCANTHUS

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
M. sacchariflorus (Silver banner grass). Vigorous, deciduous, slow-spreading, clump-forming, perennial grass. H 10ft (3m), S indefinite. Hairless, mid-green leaves last into winter, often turning bronze. Produces open, branched panicles of hairy, silvery-white spikelets in summer followed by attractive seedheads. Z4–9
M. sinensis. Deciduous, clump-forming, erect, perennial grass. H 10ft (3m), S 4ft (1.2m). Has mostly basal, flat, arching or erect, linear, blue-green leaves, to 4ft (1.2m) long. Pyramidal plumes of silky-hairy, pale gray spikelets, tinted maroon or purple-brown, are borne in fall. Z5–9.
var. *condensatus* 'Cosmopolitan' illus. p.285. **'Flamingo'** illus. p.286. **'Gracillimus'** illus. p.286. **'Kleine Fontäne'**, H 5ft (1.5m), has narrow leaves and drooping red panicles that quickly turn silver. **'Morning Light'**, H 4ft (1.2m), resembles 'Gracillimus', but has narrow, white leaf margins, giving a silvery effect. **'Silberfeder'** (syn. *M.s.* 'Silver Feather') H to 8ft (2.5m), is free-flowering, and produces silvery to pale pinkish-brown panicles in early and mid-fall, remaining through winter. **'Silver Feather'** see *M.s.* 'Silberfeder'. **'Yakushima Dwarf'** illus. p.285. **'Zebrinus'** illus. p.284.

MITCHELLA

Partridge berry

RUBIACEAE

Genus of evergreen, trailing perennials, grown for their foliage and fruits. Makes excellent groundcover, especially in woodlands, although is sometimes difficult to establish. Fully hardy. Prefers shade and humus-rich, neutral to acidic soil. Propagate by division of rooted runners in spring or by seed in fall.
M. repens (Creeping box, Partridge berry). Evergreen, trailing, mat-forming perennial. H 2in (5cm), S indefinite. Bears small, ovate, white-veined, green leaves with heart-shaped bases. In early summer has pairs of tiny, fragrant, tubular, white flowers, sometimes purple-tinged, followed by spherical, bright red fruits. Suits a rock garden or peat bed. Z3–8

MITELLA

Bishop's cap, Mitrewort

SAXIFRAGACEAE

Genus of clump-forming, summer-flowering, slender-stemmed, rhizomatous perennials. Fully hardy. Requires shade and humus-rich, moist soil. Propagate by division in spring or by seed in fall.
M. breweri illus. p.371.

MITRARIA

GESNERIACEAE

Genus of one species of evergreen, woody-stemmed, scrambling or spreading shrub. Frost hardy. Needs a position in partial shade and in peaty, acidic soil. Propagate by seed in spring or stem cuttings in summer.
M. coccinea illus. p.193.

MOLINIA

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
M. altissima. See *M. caerulea* subsp. *arundinacea*.
M. caerulea* subsp. *arundinacea, syn. *M. altissima.* Tuft-forming, herbaceous, perennial grass. H 8ft (2.5m), S 2ft (60cm). Has broad, flat, gray-green leaves and spreading panicles of purple spikelets on stiff, erect stems in summer. Needs a dry, sunny position and acidic soil. Z4–7.
'Transparent' illus. p.286.
'Windspiel', H to 6ft (2m), has airy plumes of yellow-brown flowers. **subsp. *caerulea* 'Moorhexe'**, H 3ft (1m), is very upright, with dark purple spikelets held tightly against erect stems. **subsp. *caerulea* 'Variegata'**, H 2ft (60cm), has yellow-striped, mid-green leaves and, in late summer, panicles of purplish spikelets.

MOLTKIA

BORAGINACEAE

Genus of perennials, subshrubs, or shrubs, some evergreen, grown for their funnel-shaped flowers in summer. Borderline fully to frost hardy. Prefers sun and well-drained, neutral to alkaline soil. Propagate by semiripe cuttings in summer or seed in fall.
***M.* x *intermedia*.** Evergreen, open, dome-shaped subshrub. H 1ft (30cm), S 20in (50cm). Stems are clothed in narrowly linear, dark green leaves. Abundant, loose spikes of small, open funnel-shaped, bright blue flowers are produced in summer. (borderline) Z5–8
M. petraea. Semievergreen, bushy shrub. H 1ft (30cm), S 2ft (60cm). Has long, narrow, hairy leaves and clusters of pinkish-purple buds open into funnel-shaped, violet-blue flowers in summer. (borderline) Z5–8
M. suffruticosa illus. p.342.

MOLUCCELLA

LAMIACEAE/LABIATAE

Genus of erect, branching annuals and short-lived perennials, grown for their flowers, which may be dried for flower arrangements. Frost hardy. Grow in sun and in rich, very well-drained soil. May be propagated by seed sown under glass in spring, or outdoors in late spring.
M. laevis (Bells of Ireland, Shell flower) illus. p.316.

MONARDA

Bergamot

LAMIACEAE/LABIATAE

Genus of annuals and clump-forming perennials, grown for their aromatic foliage as well as for their flowers. Fully hardy. Requires sun and moist soil. Propagate species and cultivars by division in spring, species only by seed in spring.
***M.* 'Adam'.** Clump-forming perennial. H 30in (75cm), S 1½ft (45cm). Ovate, usually toothed, mid-green leaves are aromatic and hairy. Bears dense whorls of 2-lipped, cerise flowers throughout summer. Z7–11
***M.* 'Beauty of Cobham'.** Clump-forming perennial. H 3ft (90cm), S 1½ft (45cm). Has purplish-green leaves. Bears pale pink flowers, with purple-pink bracts, from midsummer to early fall. (borderline) Z4–9
***M.* 'Cambridge Scarlet'** illus. p.235.
***M.* 'Croftway Pink'** illus. p.233.
M. didyma (Bee balm, Bergamot). Bushy, clump-forming perennial. H 3ft (90cm) or more, S 1½ft (45cm). Square stems carry ovate to lance-shaped, dull, mid-green leaves, softly hairy beneath. Each flowering stem bears 2 whorls of bright scarlet or pink flowers, with red-tinged bracts, from mid- to late summer. Z4–9
M. fistulosa illus. p.239.
***M.* 'Prairie Night'.** See *M.* 'Prärienacht'.
***M.* 'Prärienacht'**, syn. *M.* 'Prairie Night'. Clump-forming perennial. H 4ft (1.2m), S 1½ft (45cm). Ovate, toothed leaves are mid-green. Bears dense whorls of rich violet-purple, 2-lipped flowers from mid-summer to early fall. (borderline) Z7–11
***M.* 'Violet Queen'.** Upright, clump-forming perennial. H 3ft (90cm), S 1½ft (45cm). Bears bright violet-purple flowers above purple-tinged, mid-green leaves throughout summer. (borderline) Z4–9

MONSTERA

ARACEAE

Genus of evergreen, woody-stemmed, often epiphytic root climbers, grown for their large, handsome leaves. Insignificant, creamy-white flowers with hooded spathes are produced intermittently. Frost tender. Provide humus-rich, well-drained soil and light shade in summer. Water moderately, less when temperatures are low. Provide support. If necessary, shorten long stems in spring. Propagate by leaf-bud or stem-tip cuttings in summer.
① All parts except the fruit may cause mild stomach upset when ingested, and contact with the fruit may irritate skin.
M. deliciosa (Swiss-cheese plant) illus. p.463.

MORAEA

IRIDACEAE

Genus of deciduous or semi-deciduous corms with short-lived, irislike flowers. Frost hardy to half hardy. Winter-growing species are half hardy, need full sun and well-drained soil; keep dry in summer during dormancy and start into growth by watering in fall. Summer-growing species are frost hardy and dormant in winter; grow in a sheltered, sunny site and well-drained soil. Propagate winter growers by seed in fall, in spring for summer growers.
M. huttonii illus. p.393.
M. ochroleuca, syn. *Homeria ochroleuca*. Spring- or summer-flowering corm. H to 22in (55cm), S 2–3in (5–8cm). Slender, wiry stems each have 1 or 2 long, narrow, semierect, basal leaves. Bears a succession of upright, scented, cup-shaped to flattish, yellow flowers, each sometimes with a central, orange stain. Z8–11
M. polystachya. Winter-growing corm. H to 1ft (30cm), S 2–3in (5–8cm). Bears long, narrow, semierect, basal leaves. Stem has a succession of erect, flattish, blue or lilac flowers, 3in (8cm) across, in winter to spring. Outer petals each have a central, yellow mark. Z9–11
M. ramosissima. Late spring- to early summer-flowering corm. H 20–48in (50–120cm), S 4in (10cm). Has numerous, semierect, narrowly linear, channeled, basal leaves. Bears yellow flowers, with deeper yellow marks on the inner petals, on many-branched stems. Z9–11
M. sisyrinchium, syn. *Gynandiris sisyrinchium*, *Iris sisyrinchium,* illus. p.419.
M. spathacea. See *M. spathulata*.
M. spathulata, syn. *M. spathacea*. Summer-growing corm. H to 3ft (1m), S 4–6in (10–15cm). Has one long, narrow, semierect, basal leaf. Tough flower stem bears a succession of up to 5 upward-facing, yellow flowers, 2–3in (5–7cm) across, with reflexed, outer petals, in summer. Z9–11

MORINA

CAPRIFOLIACEAE

Genus of evergreen perennials; the most commonly grown species is *M. longifolia*, for its thistlelike foliage and its flowers. Fully hardy, but protect from drying spring winds. Needs full sun and well-drained, ideally sandy soil. Propagate by division directly after flowering or by seed when fresh, in late summer.
M. longifolia illus. p.231.

MORISIA

CRUCIFERAE/BRASSICACEAE

Genus of one species of compact, rosette-forming perennial with a long tap root. Good for rock gardens and alpine houses. Borderline hardy to fully hardy. Needs sun and gritty, well-drained soil. Propagate by seed in spring or root cuttings in winter.
***M. monanthos* 'Fred Hemingway'**, illus. p.358.

MORUS

Mulberry

MORACEAE

Genus of deciduous, upright to rounded, shrubs and trees, grown for foliage and edible fruits. Tiny flowers are borne in spring. Fully hardy to frost tender. Requires full sun and fertile, well-drained soil. Propagate by softwood cuttings in summer or by seed in fall.

***M. alba* 'Laciniata'** (White mulberry) illus. p.88. **'Pendula'** is a deciduous, weeping tree. H 10ft (3m), S 15ft (5m). Rounded, sometimes lobed, glossy, deep green leaves turn yellow in fall. Edible, ovate, fleshy, pink, red or purple fruits ripen in summer. Z4–8
M. nigra (Black mulberry). Deciduous, round-headed tree. H 40ft (12m), S 50ft (15m). Heart-shaped, dark green leaves turn yellow in fall. Bears edible, ovate, succulent, dark purplish-red fruits in late summer or early fall. Z6–10. **'Chelsea'** has large, succulent fruits; starts cropping early in life.

MUCUNA

PAPILIONACEAE/LEGUMINOSAE

Genus of vigorous, evergreen, twining climbers and shrubs, grown for their large, pealike flowers. Frost tender. Humus-rich, moist but well-drained soil is essential, with partial shade in summer. Water freely when in full growth, less at other times. Needs plenty of space to climb; provide support. Thin out crowded stems in spring. Propagate by seed in spring or by layering in late summer. Whitefly and red spider mite may cause problems.
M. bennettii (New Guinea creeper). Strong- and fast-growing, evergreen, twining climber. H 50–80ft (15–25m). Leaves are divided into 3 ovate leaflets. In summer has pendent clusters of pealike, orange-scarlet flowers. Z11–12 (min. 50ºF/10ºC)
***M. deeringiana*.** See *M. pruriens* var. *utilis*.
M. pruriens* var. *utilis, syn. *M. deeringiana*. Vigorous, evergreen, twining climber. H 50ft (15m) or more. Leaves, of 3 ovate leaflets, are used for fodder and green manure. Has pealike, both green- and red-purple flowers in long, pendent clusters in summer and fall. May be short-lived. Z10–12 (min. 46°F/8°C)

MUEHLENBECKIA

POLYGONACEAE

Genus of deciduous or evergreen, slender-stemmed, summer-flowering shrubs and woody-stemmed, scrambling climbers, grown for their foliage. Frost hardy to frost tender. Grow in sun or partial shade and in well-drained soil. Propagate by semiripe cuttings in summer.
M. axillaris of gardens. See *M. complexa*.
M. complexa, syn. *M. axillaris* of gardens. Deciduous, creeping shrub or twining climber. H to 10ft (3m), S 3ft (1m). Slender, wiry stems bear variably shaped (ovate to fiddle-shaped), dark green leaves. Bears tiny, star-shaped, greenish-white flowers in midsummer that are followed by small, spherical, waxy, white fruits. Z9–11

***Mulgedium*.** See *Cicerbita*.

MURRAYA

RUTACEAE

Genus of evergreen trees and shrubs, grown for their overall appearance. Frost tender. Requires a position in full light or partial shade and in humus-rich, well-drained soil. Water containerized plants freely when in full growth, moderately at other times. Pruning is tolerated in late winter if necessary. Propagate by seed in spring or by semiripe cuttings in summer. Whitefly may be troublesome.
***M. exotica*.** See *M. paniculata*.
M. paniculata, syn. *M. exotica* (Chinese box, Orange jasmine). Evergreen, rounded shrub or tree. H and S 6–12ft (2–4m). Pungently aromatic, edible, glossy, rich green leaves each have ovate leaflets. Bears fragrant, 5-petaled, white flowers in terminal clusters year-round, followed by tiny, egg-shaped, red fruits. Z10–11

MUSA

Banana, Plantain

MUSACEAE

Genus of evergreen, palmlike, suckering perennials, with false stems formed from overlapping leaf sheaths, grown for their foliage, flowers and fruits (bananas), not all of which are edible. Frost hardy to frost tender. In frost-prone areas, grow in a temperate greenhouse, or as summer bedding. In warmer areas, grow in sun or partial shade and in humus-rich, well-drained soil. Propagate by division year-round, by offsets in summer or by suckers after flowering.
***M. acuminata* 'Dwarf Cavendish'** (Edible banana, French plantain). Upright, suckering perennial. H and S to 10ft (3m). Has oblong leaf-blades, to 5ft (1.5m) long. Bears pendent clusters of yellow flowers, with reddish-purple bracts, irregularly year-round. Seedless yellow fruits, to 8in (20cm) long, with sweet-tasting, white pulp, are borne in long bunches. Should fruit annually at a minimum temperature of 64°F (18°C). Z9–11 (min. 50ºF/10ºC)
***M. arnoldiana*.** See *Ensete venticosum*.
M. basjoo, syn. *M. japonica* (Japanese banana), illus. p.219.
***M. ensete*.** See *Ensete venticosum*.
M. lasiocarpa (Chinese dwarf banana). Suckering perennial. H to 6ft (1.8m), S to 6ft (2m). Has oblong to lance-shaped, glaucous, gray-green leaves, to 2ft (60cm)long. From the second year of growth, in summer and lasting up to several months, erect flower heads bear clusters of small flowers, each enclosed in a large, bright yellow bract. Has inedible, small fruits. Z8–11
M. ornata (Flowering banana) illus. p.470.
M. sikkimensis (Darjeeling banana). Suckering perennial with red-tinged false stems. H to 12ft (4m), S to 6ft (2m). Has oblong to lance-shaped, yellowish-green leaves, to 6ft (2m) long. Young leaves, flushed reddish-purple beneath, have red midribs. Small flowers, each enclosed in 1–2 large, purplish-red bracts, are borne in pendent spikes. Angular fruits mature to green, then turn brown. Z8–11. **'Red Tiger'** has bold, reddish-purple marks on the upper leaf surfaces.
M. velutina (Pink banana). Suckering perennial. H 3–6ft (1–1.8m), S 3–5ft (1–1.5m). Has paddle-shaped leaves, to 3ft (1m) long, sometimes flushed purple. In summer, produces upright flower heads with tubular, yellow flowers, each enclosed by a purplish-pink bract, bright pink inside. The small, hairy, pinkish-purple fruits, split when ripe to reveal numerous black seeds. Z9–11 (min. 50ºF/10ºC)

MUSCARI

Grape hyacinth

ASPARAGACEAE

Genus of spring-flowering bulbs, each with a cluster of narrowly strap-shaped, basal leaves, usually emerging in spring just before flowers. Leafless flower stems bear dense spikes of small flowers, most of which have constricted mouths. Good for massed displays in a mixed border, for a wild or woodland garden, or for naturalizing in grass. Fully hardy to frost hardy. Requires sun and fairly well-drained soil. Plant in groups in fall. Propagate by division in late summer or by seed in fall.
M. armeniacum illus. p.420.
'Blue Spike' is a spring-flowering bulb. H 6–8in (15–20cm), S 3–4in (8–10cm). Has 3–6 long, narrow, semierect, basal leaves. Bears dense spikes of fragrant, bell-shaped, deep blue flowers; constricted mouths have rims of paler blue or white "teeth." **'Dark Eyes'** has rich, deep blue flowers with contrasting white mouths. **'Peppermint'** produces bicolored spikes of pale blue flowers graduating to white at the top. **'Valerie Finnis'** has dense flower spikes of gray-blue flowers. Z4–8
M. aucheri, syn. *M. lingulatum*, illus. p.420. **'White Magic'** is a spring-flowering bulb. H 4–6in (10–15cm), S 2in (5cm). Has erect or semierect, narrow, sickle- to spoon-shaped, mid-green leaves. Produces green buds in tight spikes that open to pure white flowers with constricted mouths. Z4–8
M. azureum, syn. *Hyacinthus azureus*, *Pseudomuscari azureum*. Spring-flowering bulb. H 4–6in (10–15cm), S 2–3in (5–8cm). Has 2–3 narrowly spoon-shaped, semierect, basal, grayish-green leaves. Produces a very dense spike of bell-shaped, pale clear blue flowers; mouths have small "teeth" with central, dark blue stripes. May self-seed freely. Z4–8
***M. botryoides*.** Spring-flowering bulb. H 6–8in (15–20cm), S 2–3in (5–8cm). Has 2–4 narrowly spoon-shaped, semierect, basal leaves. Each tiny, nearly round, bright blue flower has a constricted mouth and white-toothed rim. Z4–8. **'Album'** illus. p.415.
M. comosum, syn. *Leopoldia comosa* (Tassel grape hyacinth). Late spring-flowering bulb. H 8–12in (20–30cm), S 4–5in (10–12cm). Produces up to 5 strap-shaped, semierect, basal, gray-green leaves. Bears a loose spike of bell-shaped, fertile, brownish-yellow flowers with a tuft of threadlike, sterile, purplish-blue flowers at the tip. Z5–8. **'Monstrosum'** see *M.c.* 'Plumosum'. **'Plumosum'** (syn. *M.c.* 'Monstrosum'; Feather grape hyacinth) illus. p.419.
M. latifolium illus. p.403.
***M. lingulatum*.** See *M. aucheri*.
M. macrocarpum, syn. *M. moschatum* var. *flavum*, *M. muscarimi* var. *flavum*, illus. p.421.
***M. moschatum* var. *flavum*.** See *M. macrocarpum*.
***M. muscarimi* var. *flavum*.** See *M. macrocarpum*.
M. neglectum, syn. *M. racemosum*, illus. p.420.
***M. pycnantha*.** See *Bellevalia pycnantha*.
***M. racemosum*.** See *M. neglectum*.

MUSSAENDA

RUBIACEAE

Genus of evergreen perennials, shrubs, subshrubs, and scrambling climbers, grown for their flowers. Frost tender; where temperatures fall below 15ºC (59ºF) grow in a warm greenhouse. Requires a position in full light and fertile, well-drained soil. Water freely when in full growth, less at other times. Provide support and thin out crowded stems in spring. Propagate by seed in spring or by air-layering in summer. Whitefly and red spider mite may cause problems.
***M. erythrophylla*.** Moderately vigorous, evergreen, scrambling climber. H 20–30ft (6–10m). Has broadly ovate, bright green leaves. In summer, bears small, creamy-white flowers, each with one large, ovate, bractlike, red petal, a red tube, and yellow petal lobes. Z12 (min. 59ºF/15ºC)

MUTISIA

ASTERACEAE/COMPOSITAE

Genus of evergreen shrubs and tendril climbers, grown for their long-lasting flower heads. Frost to half hardy. Plant with roots in shade and leafy parts in sun, in well-drained soil. Propagate by seed in fall, by stem cuttings in late spring or summer, or by layering in fall.
M. decurrens illus. p.208.
***M. oligodon*.** Evergreen, tendril climber. H to 5ft (1.5m). Oblong, glossy, green leaves with sharply toothed margins are 1–1½in (2.5–3.5cm) long. From summer to fall, produces long-stalked, daisylike, yellow-centered, pink flower heads. Grow against a low wall or through a shrub. Z6–10

MYOPORUM

SCROPHULARIACEAE

Genus of spreading, prostrate to upright, evergreen shrubs and trees, grown for their overall appearance and as hedges and windbreaks. Frost hardy to frost tender. Prefers full light and well-drained soil; will tolerate poor soil. Water potted specimens moderately. Propagate by seed when ripe or in spring or by semiripe cuttings in late summer.
M. laetum (Ngaio). Evergreen, rounded to upright shrub or tree. H 10–30ft (3–10m), S 6–15ft (2–5m). Has fleshy, ovate, lustrous, bright green leaves. Clusters of small, bell-shaped, white flowers, dotted purple, are borne in summer, then tiny, narrowly oblong, pale to deep red-purple fruits. Z9–11
M. parvifolium illus. p.454.

MYOSOTIDIUM

BORAGINACEAE

Genus of one species of evergreen perennial, with forget-me-not-type flowers, that is suitable for mild, coastal areas. Frost hardy. Prefers partial shade and moist soil. Seaweed is recommended as a mulch. Not easy to cultivate, and once established should not be disturbed. Propagate by division in spring or by seed when ripe, in summer or fall.
M. hortensia, syn. *M. nobile* (Chatham Island forget-me-not), illus. p.271.
***M. nobile*.** See *M. hortensia*.

MYOSOTIS
Forget-me-not

BORAGINACEAE

Genus of annuals, biennials, and clump or mat-forming perennials, grown for their flowers. Most species are good for rock gardens and screes; *M. scorpioides* is best grown as a marginal water plant. The dwarf perennials are usually short-lived, but self-seed freely. Fully hardy. Most prefer sun or partial shade and fertile, well-drained soil. Propagate by seed in spring.
M. alpestris, syn. *M. rupicola* (Alpine forget-me-not), illus. p.356.
M. australis. Short-lived, tuft-forming perennial. H 5in (12cm), S 3in (8cm). Has ovate, rough-textured leaves and, in summer, produces tight sprays of open funnel-shaped, yellow or white flowers. Good for a scree. Z3–8
M. palustris. See *M. scorpioides*.
M. rupicola. See *M. alpestris*.
***M. scorpioides* 'Mermaid'**, syn. *M. palustris* (Water forget-me-not), illus. p.441.
***M. sylvatica* 'Blue Ball'** illus. p.315.
'Mon Amie Blue' is a low, mound-forming, short-lived perennial. H and S 6–8in (15–20cm). Produces ovate to lance-shaped, gray-green leaves and dense heads of saucer-shaped, light blue flowers in summer. Good for massed plantings.
Sylva Series illus. p.313. **'Blue Sylva'**, H 8in (20cm), is low and spreading and produces bright blue flowers. Z3–8

Myrceugenia apiculata. See *Luma apiculata*.

MYRICA

MYRICACEAE

Genus of deciduous and evergreen, usually suckering shrubs and trees found in moist soils worldwide. *M. gale* is useful for a bog garden and very effective when grown in groups. Fully hardy to frost hardy. They have alternate, lance-shaped to ovate, usually aromatic, dark green leaves. Needs humus-rich, moist soil, and a position in full sun or partial shade.
M. gale (Bog myrtle) illus. p.162.

MYRIOPHYLLUM
Milfoil

HALORAGACEAE

Genus of deciduous, perennial, or annual, submerged water plants, grown for their foliage. Most species are ideal as depositories for fish spawn. Fully hardy to frost tender. Requires full sun. Spreads widely; keep in check by removing excess growth as required. Propagate by root cuttings in spring or summer.
M. hippuroides (Western milfoil). Deciduous, perennial, spreading, submerged water plant with thin stems. S indefinite. Produces a dense mass of small, feathery, pale green leaves. Tiny, greenish-cream flowers are borne from the axils of the emergent leaves in summer. Suitable for a cold-water aquarium. Z9–11
M. proserpinacoides. See *M. aquaticum*.
M. verticillatum (Whorled water milfoil) illus. p.442.

MYRRHIS
Sweet Cicely

APIACEAE/UMBELLIFERAE

Genus of one species of summer-flowering perennial. Fully hardy. Requires a position in partial shade and well-drained soil. Propagate by seed in fall or spring.
M. odorata (Sweet Cicely) illus. p.230.

MYRSINE

PRIMULACEAE

Genus of evergreen shrubs and trees, with inconspicuous flowers, grown mainly for their foliage. Also bears decorative fruits, to obtain which plants of both sexes must be grown. Suitable for rock and peat gardens. Frost hardy to frost tender, but in cold areas requires shelter. Requires a position in sun or shade and in any fertile, well-drained soil other than a shallow, chalky one. Propagate by seed in fall or semiripe cuttings in summer.
M. africana (African boxwood, Cape myrtle). Very slow-growing, evergreen, bushy, dense shrub. H and S 30in (75cm). Small, glossy, dark green leaves are aromatic and rounded. Tiny, yellowish-brown flowers in late spring are succeeded by spherical, pale blue fruits. Z9–11

MYRTILLOCACTUS

CACTACEAE

Genus of shrubby or treelike, perennial cacti with ribbed, spiny, blue-green stems. Bears star-shaped flowers that open at night. Frost tender. Needs a sunny, well-drained site. Propagate by seed or stem cuttings in spring.
M. geometrizans (Blue candle) illus. p.489.

MYRTUS
Myrtle

MYRTACEAE

Genus of evergreen shrubs, sometimes treelike, grown for their flowers, fruits, and aromatic foliage. Frost hardy; in cold areas plant against a warm, sunny wall. Requires full sun and fertile, well-drained soil. May be pruned in spring. Propagate by seed in a cold frame in fall or semiripe cuttings in late summer.
M. apiculata. See *Luma apiculata*.
M. bullata. See *Lophomyrtus bullata*.
M. chequen. See *Luma chequen*.
M. communis (Common myrtle) illus. p.122. **'Jenny Reitenbach'** see *M.c.* subsp. *tarentina*. **'Microphylla'** see *M.c.* subsp. *tarentina*. **subsp. *tarentina*** (syn. *M.c.* 'Jenny Reitenbach', *M.c.* 'Microphylla'; Tarentum myrtle) is a compact, bushy shrub. H and S 6ft (2m). Bears small leaves that are narrowly ovate, glossy and dark green. Produces fragrant, saucer-shaped, pink-tinted, white flowers, each with a dense cluster of stamens, from mid-to late summer or early fall, followed by round, white fruits. Very wind-resistant and good for hedging in mild areas. Z8–11
M. luma. See *Luma apiculata*. **'Glanleam Gold'** see *Luma apiculata* 'Glanleam Gold'.
M. ugni. See *Ugni molinae*.

N

NANDINA

BERBERIDACEAE

Genus of one species of evergreen or semievergreen, summer-flowering shrub, grown for its foliage and flowers. Frost hardy. Prefers a sheltered, sunny site and fertile, well-drained but not too dry soil. On established plants prune untidy, old stems to base in spring. Propagate by semiripe cuttings in summer.
N. domestica (Heavenly bamboo). Evergreen or semievergreen, upright, elegant shrub. H 6ft (2m), S 5ft (1.5m). Leaves have narrowly lance-shaped, dark green leaflets, purplish-red when young and in fall-winter. Large panicles of small, star-shaped, white flowers, with large yellow anthers, borne in midsummer are followed in warm climates by spherical, red fruits. Z9–11. **'Fire Power'** illus. p.143. **'Richmond'** is vigorous and free-fruiting, with bright red foliage in fall and winter.

NARCISSUS
Daffodil

AMARYLLIDACEAE

Genus of bulbs, grown for their ornamental flowers. Daffodils usually have linear, basal leaves and a spread of up to 8in (20cm). Each flower has a trumpet or cup (the corona) and petals (botanically known as perianth segments). Fully hardy, except where otherwise stated. Prefer sun or light shade and well-drained soil, but Div.8 cultivars (*see below*) prefer a sunny site and tolerate lighter soils. Deadhead flowers as they fade and remove the spent foliage during midsummer. Most cultivars increase naturally by offsets; dense clumps should be divided no sooner than 6 weeks after flowering every 3–5 years. Propagate species by fresh seed in late summer or fall. Narcissus yellow stripe virus, basal rot, slugs, large narcissus fly, and bulb and stem eelworm may cause problems. ① Contact with sap may aggravate skin allergies or irritate skin. See feature panel pp.404–405. Horticulturally, *Narcissus* is split into the following divisions.

Div. 1 Trumpet—usually solitary flowers each have a trumpet that is as long as, or longer than, the petals. Early to late spring-flowering.
Div. 2 Large-cupped—solitary flowers each have a cup at least one-third the length of, but shorter than, the petals. Spring-flowering.
Div. 3 Small-cupped—flowers are often borne singly; each has a cup not more than one-third the length of the petals. Spring- or early summer-flowering.
Div. 4 Double—most have solitary, large, fully or semidouble flowers, sometimes scented, with cup or both cup and petals replaced by petaloid structures. Some have smaller flowers, borne in clusters of 4 or more, which are often sweetly fragrant. Spring- or early summer-flowering.
Div. 5 Triandrus—nodding flowers, with short, sometimes straight-sided cups and narrow, reflexed petals, are borne 2–6 per stem. Flowers are produced in spring.
Div. 6 Cyclamineus—flowers are borne usually 1 or 2 per stem, with cup that may be flanged and often longer than those of Div.5. Petals are narrow, pointed and reflexed. Early to mid-spring-flowering.
Div. 7 Jonquil and Apodanthus—sweetly scented flowers are borne usually 2 or more per stem. Cup is short, may be flanged; petals are often flat, fairly broad, and rounded. Spring-flowering.
Div. 8 Tazetta—sweetly fragrant flowers of small-flowered cultivars are borne in clusters of 12 or more per stem; large-flowered cultivars have 3 or 4 flowers per stem. All have a small, often straight-sided cup and broad, mostly pointed petals. Late fall- to mid-spring-flowering. Most are frost to half hardy. Fall-flowering hybrids provide valuable cut flowers; "prepared" bulbs may be grown in pots for mid-winter flowering.
Div. 9 Poeticus—flowers, sometimes borne 2 per stem, may be sweetly fragrant. Each has a small, colored cup and glistening white petals. Some *N. poeticus* hybrids are categorized as Div. 3 or 8. Late spring- or early summer-flowering.
Div. 10 Bulbocodium—flowers usually borne singly on short stems, showing all the hallmarks of hoop-petticoat daffodils (*N. bulbocodium* subsp. *bulbocodium*), with insignificant petals and a widely flaring, disproportionately large cup. Winter- to spring-flowering.
Div. 11 Split-corona—usually solitary flowers with cups split for more than half their length. In (**a**), Collar daffodils, the overlapping cup segments lie against the petals. In (**b**), Papillon daffodils, the cup segments tend to be narrower, with their tips at the margin of the petals. Most fall into category (a). Spring-flowering.
Div. 12 Miscellaneous—a miscellaneous category containing hybrids with varying, intermediate flower shapes that cannot be satisfactorily classified elsewhere. Fall- to spring-flowering.
Div. 13 Daffodils distinguished solely by botanical name—a wide variety of flowers showing the huge range of floral characteristics of wild daffodils, from the tiny *N. cyclamineus* and the sweetly scented, many-flowered *N. tazetta* to the stately trumpet species. Flower in early fall to early summer.

***N.* 'Acropolis'**, Div. 4. Mid-to late spring-flowering bulb. H 28in (70cm). Large, double flowers have white, outer petals and petaloids; white, inner petals are interspersed with shorter, orange-red petaloids. Suitable for exhibition. Z3–7
***N.* 'Actaea'** (illus. p.404), Div. 9. Late spring-flowering bulb. H 28in (70cm). Fragrant flowers have glistening white petals and shallow, flanged, rich lemon cups with narrow, orange-red rims. Z3–7
***N.* 'Aircastle'** (illus. p.405), Div. 3. Mid-spring-flowering bulb. H 16in (40cm). Flowers have white petals that age greenish; shallow, flat, lemon-yellow cups deepen in color at the rim. Z3–7
***N.* 'Albus Plenus Odoratus'.** See *N. poeticus* 'Plenus'.

***N.* 'Altruist'** (illus. p.405), Div. 3. Mid-spring-flowering bulb. H 1½ft (45cm). Flowers have smooth, pale orange petals and a neat, ribbed, shallow, orange-red cup. Z3–7

***N.* 'Ambergate'** (illus. p.405), Div. 2. Mid-spring-flowering bulb. H 1½ft (45cm). Flowers each have a shallow, widely expanded, fiery scarlet cup and soft tangerine petals. Z3–7

***N.* 'Arctic Gold'**, Div. 1. Mid-spring-flowering bulb. H 16in (40cm). Rich golden-yellow flowers have broad petals and well-proportioned, flanged trumpets with neatly serrated rims. Suitable for exhibition. Z3–7

***N.* 'Arkle'** (illus. p.405), Div. 1. Vigorous daffodil. H 16in (40cm). Among the largest of the yellow trumpet daffodils, it produces flowers 5in (13cm) across, in mid-spring. Perianth segments are smooth, and each corona is slightly flared, with a roll at the mouth. Z4-8

N. assoanus, syn. *N. juncifolius*, *N. requienii* (Rush-leaved jonquil), Div. 13. Tiny mid-spring-flowering bulb. H 6in (15cm). Similar to *N. jonquilla*, but has thin, cylindrical leaves and rounded, bright clear yellow flowers with a sweet, slightly lemony fragrance. Thrives in gritty soil. Z3–7

N. asturiensis, syn. *N. minimus* of gardens, Div. 13. Late winter- or early spring-flowering bulb. H 3in (8cm). Small, pale yellow flowers have waisted trumpets and slender petals. Prefers full sun. Z3–7

***N.* 'Avalon'**, Div. 2. Mid-spring-flowering bulb. H 14in (35cm). Rounded, bright lemon-yellow flowers have wide, fluted cups that become white with age. Z3–7

***N.* 'Avalanche'** (illus. p.405), Div. 8. Early spring-flowering bulb. H 14in (35cm). Bears 8 or more sweetly fragrant flowers, each with white petals and a primrose-yellow cup that scarcely fades. May be forced for midwinter flowering. Z4–8

***N.* 'Badbury Rings'**, Div. 3. Mid-spring-flowering bulb. H 1½ft (45cm). Produces slightly scented flowers, 4in (10cm) across, with broadly ovate, smooth, deep yellow perianth segments. Shallow, bowl-shaped, vivid yellow cups have clearly defined, bright orange-red rims. Z4–8

***N.* 'Barrett Browning'**, Div. 3. Early to mid-spring-flowering bulb. H 28in (70cm). Flowers have pure white petals and short, frilled, orange-red cups. Z3–7

***N.* 'Belcanto'**, Div. 11a. Late spring-flowering bulb. H 1½ft (45cm). Flowers, 3–5in (8–12cm) across, have rounded perianth segments, almost obscured by flattened, pale yellow cups. Z3–7

***N.* x *biflorus*.** See *N.* x *medioluteus*.

***N.* 'Binkie'** (illus. p.405), Div. 2. Early spring-flowering bulb. H 1ft (30cm). Flowers open pale lemon and cups turn sulphur-white with ruffled, lemon rims. Z3–7

***N.* 'Birma'**, Div. 3. Mid-spring-flowering bulb. H 1½ft (45cm). Flowers have soft yellow petals and fiery orange cups with heavily ruffled rims. Z3–7

***N.* 'Bravoure'**, Div. 1. Early to mid-spring-flowering bulb. H 1½ft (45cm). Large flowers have overlapping, white petals and slender, slightly flared, lemon-yellow trumpets, with entire rims. Z3–7

***N.* 'Bridal Crown'** (illus. p.404), Div. 4. Late spring-flowering bulb. H 20in (50cm). Long-lasting, small, sweetly scented flowers are semidouble, with rounded, milk-white petals and white petaloids interspersed with shorter, saffron-orange ones toward the center. Z3–7

***N.* 'Broadway Star'** (illus. p.404), Div. 11b. Mid-spring-flowering bulb. H 16in (40cm). Bears white flowers, 3in (8cm) across. The expanded segments of the split cups are flattened against the perianth segments; each has a narrow, orange mid-stripe running lengthways. Z3–7

***N.* 'Brunswick'**, Div. 2. Early spring-flowering bulb. H 16in (40cm). Long-lasting flowers have white petals and long, flared, primrose cups, which fade to lemon, with darker rims. Foliage is a bluish-green. Suitable for cutting. Z3–7

N. bulbocodium (Hoop-petticoat daffodil; illus. p.405), Div. 13. Vigorous, spring-flowering bulb. H 4–6in (10–15cm). Flowers are golden-yellow with conical cups and narrow, pointed petals. Thrives in moist turf in full sun. Z4–8. **var. *citrinus***, H 6in (15cm), has slender, dark green leaves and clear pale lemon flowers. Hybrids of this species are in Div.10.

***N.* 'Canaliculatus'** of gardens (illus. p.404), Div. 8. Mid-spring-flowering bulb. H 13in (33cm). Produces a cluster of 4 or more small, fragrant flowers per stem, each with reflexed, white petals and a shallow, straight-sided, yellow cup. Z4–8

***N.* 'Cantabile'**, Div. 9. Late spring-flowering bulb. H 10in (25cm). Stiff stems bear neat, well-rounded, glistening white flowers, with tiny, red-rimmed, yellow cups and a prominent green eye. Z3–7

N. cantabricus (White hoop-petticoat daffodil), Div. 13. Spring- and sometimes winter-flowering bulb. H 6–8in (15–20cm). Similar in form to *N. bulbocodium* subsp. *bulbocodium*, but is less robust. Flowers are milk- or ice-white. Thrives in an alpine house or greenhouse. Z4–8

***N.* 'Capax Plenus'.** See *N.* 'Eystettensis'.

***N.* 'Cassata'** (illus. p.405), Div. 11a. Mid-spring-flowering bulb. H 16in (40cm). Cups are soft primrose and distinctly split into segments with ruffled margins, while petals are broad and milk-white. Z3–7

***N.* 'Charity May'** (illus. p.405), Div. 6. Early to mid-spring-flowering bulb. H 1ft (30cm). Small, pale lemon flowers each have broad, reflexed petals and slightly darker cups. Z4–8

***N.* 'Cheerfulness'** (illus. p.404), Div. 4. Mid-spring-flowering bulb. H 16in (40cm). Long-lasting, small, sweetly scented, fully double flowers, 2¼in (5.5cm) across, are borne several to a stem, with milk-white petals and petaloids interspersed with shorter, orange-yellow ones at the center. Excellent for cutting. Z3–7

***N.* 'Cool Crystal'**, Div. 3. Mid-spring bulb. H 20in (50cm). Has white flowers with bowl-shaped, green-eyed cups. Z3–7

N. cyclamineus, Div. 13. Late winter- to early spring-flowering bulb. H 6–8in (15–20cm). Slender, nodding, gold flowers have narrow, reflexed petals and long, slender, flanged, waisted trumpets. Z3–7

***N.* 'Daydream'**, Div. 2. Mid-spring-flowering bulb. H 14in (35cm). Flowers have green-yellow petals and a pale trumpet that fades to white as it ages. Z3–7

***N.* 'Diversity'**, Div. 11a. Mid-spring-flowering bulb. H 16in (40cm). Flowers have pure white petals and a large, pink-tinted shallow, bowl-shaped cup. Flowers very freely and is suitable for cutting. Z4–8

***N.* 'Dove Wings'** (illus. p.404), Div. 6. Mid-spring-flowering bulb. H 1ft (30cm). Has small flowers with milk-white petals and fairly long, soft primrose cups. Z4–8

***N.* 'Dutch Lemon Drops'**, Div. 5. Mid-spring-flowering bulb. H 25cm (10in). Each stem bears up to 3 star-shaped flowers, 2.5cm (1in) across, with spreading or slightly reflexed, white perianth segments surrounding long, pale yellow cups. Z4–8

***N.* 'Empress of Ireland'** (illus. p.404), Div. 1. Mid-spring-flowering bulb. H 16in (40cm). Large, robust, milk-white flowers have broad, overlapping petals, reflexed at the apex, and a slightly darker, flanged trumpet with a rolled, crenate mouth. Z3–7

***N.* 'Eystettensis'**, syn. *N.* 'Capax Plenus' (Queen Anne's double daffodil), Div. 4. Mid-spring-flowering bulb. H 8in (20cm). Dainty, double flowers are composed of pointed, soft pale primrose petaloids neatly arranged in whorls. Z3–7

***N.* 'Falconet'**, Div. 8. Early spring-flowering bulb. H 16in (40cm). Each stem bears 3–5 fragrant flowers, 1½in (4cm) across,with overlapping, deep yellow perianth segments, and small, bowl-shaped, bright orange trumpets. Z4–8

***N.* 'February Gold'**, Div. 6. Early spring-flowering bulb. H 1ft (30cm). Solitary, long-lasting flowers have clear golden petals and long, flanged, slightly darker trumpets. Useful for borders and naturalizing. Z3–7

***N.* 'February Silver'** (illus. p.405), Div. 6. Robust, early spring-flowering bulb. H 13in (33cm). Long-lasting flowers with milk-white petals and long, sturdy, nodding trumpets open rich lemon and age to creamy-yellow. Z3–7

***N.* 'Fortune'**, Div. 2. Early to mid-spring-flowering bulb. H 20in (50cm). Flowers have ribbed, dark lemon petals and bold, flared, copper-orange cups. Good for cutting. Z3–7

***N.* 'Fragrant Breeze'** (illus. p.404), Div. 2. Early to mid-spring-flowering bulb. H 17in (43cm). Fragrant flowers have pure white petals and vase-shaped, apricot-yellow cups. Z3–7

***N.* 'Gay Kybo'**, Div. 4. Mid-spring-flowering bulb. H 1½ft (45cm). Bears large, double flowers, with multiple layers of creamy white petals and shorter, orange, trumpet segments. Z3–7

***N.* 'Geranium'**, Div. 8. Mid- to late-spring-flowering bulb. H 14in (35cm). Stems bear up to 6 scented flowers, with white petals and flattened, flared, orange-red cups. Excellent for cutting and indoor pots. Z3–7

***N.* 'Gold Convention'**, Div. 2. Mid-spring-flowering bulb. H 20in (50cm). Large, 4½in (11cm), flowers have rich golden petals and a deep trumpet in the same color. Z3–7

***N.* 'Golden Ducat'** (illus. p.405), Div. 4. Mid-spring-flowering bulb. H 14in (35cm). Produces variable, sometimes poorly formed, double, rich golden flowers. Suitable for cutting. Z3–7

***N.* 'Golden Vale'**, Div. 1. Mid-spring-flowering bulb. H 1½ft (45cm). Flowers have rich, golden yellow petals and a matching, flared trumpet. Suitable for cutting. Z3–7

***N.* 'Grand Primo Citronière'**, Div. 8. Late fall- to early spring-flowering bulb. H 13in (32cm). Bears 8 or more fragrant flowers, each with milk-white petals and a clear lemon cup, which fades to cream. Force "treated" bulbs for midwinter flowering. Good for cutting. Z3–7

***N.* 'Grand Soleil d'Or'** illus. p.407.

***N.* 'Hawera'** (illus. p.405), Div. 5. Late spring-flowering bulb. H 7in (18cm). Nodding flowers are a delicate lemon-yellow. Requires a sunny position. Suitable for rockeries and alpine beds; also good as an indoor potted plant. Z3–7

***N.* 'Highfield Beauty'**, Div. 8. Mid-spring-flowering bulb. H 20in (50cm). Stems bear up to 3 slightly scented flowers, with butter-yellow petals and slightly darker trumpets. Z3–7

***N.* 'Home Fires'** (illus. p.405), Div. 2. Early spring-flowering bulb. H 1½ft (45cm). Flowers each have pointed, rich lemon petals and an orange-scarlet cup with a lobed and frilled rim. Z3–7

***N.* 'Honeybird'**, Div. 1. Mid-spring-flowering bulb. H 20in (50cm). Well-proportioned flowers, 4½in (10.5cm) across, open greenish-yellow, trumpets gradually fading almost to pure white. Z3–7

***N.* 'Ice Follies'** (illus. p.404), Div. 2. Mid-spring flowering bulb. H 16in (40cm). Flowers have milk-white petals and wide, almost flat, primrose-yellow cups, fading to cream. Excellent for cutting. Z3–7

***N.* 'Irene Copeland'** (illus. p.405), Div. 4. Mid-spring-flowering bulb. H 14in (35cm). Bears large, fully double flowers of neat, milk-white petaloids interspersed with shorter, pale creamy-yellow ones. Excellent for cutting. Z3–7

***N.* 'Jack Snipe'** (illus. p.405), Div. 6. Sturdy, early to mid-spring-flowering bulb. H 8in (20cm). Long-lasting, milk-white flowers are similar to those of *N.* 'Dove Wings', but have narrower petals with incurved margins and medium-length cups of rich dark lemon-yellow. Z3–7

***N.* 'Jenny'** (illus. p.405), Div. 6. Early to mid- spring-flowering bulb. H 1ft (30cm). Bears long-lasting flowers, each with milk-white petals and a medium-length, flanged, soft lemon trumpet that turns creamy-white. Z3–7

***N.* 'Jetfire'**, Div. 6. Floriferous, early spring-flowering bulb. H 8in (20cm). Flowers have overlapping, reflexed, clear golden-yellow petals and a cylindrical, ribbed, vibrant orange cup, slightly waisted before the crenate rim. Z3–7

N. jonquilla (Wild jonquil), Div. 13. Late-spring-flowering bulb. H 1ft (30cm). Richly fragrant flowers are borne in a cluster of 6 or more; each has tapering, yellow petals and a shallow, dark gold cup. Distinctive foliage is semicylindrical, dark, shining. and grooved. Z3–7. **'Flore Pleno'** (Queen Anne's jonquil) has loosely double flowers; broad, incurved, yellow petals are interspersed with short, darker ones.

***N.* 'Jumblie'**, Div. 12. Early spring-flowering bulb. H 7in (17cm). Bears 2 or 3 long-lasting flowers, each with broad, golden petals and a sturdy, flanged, orange-yellow cup. Ideal potted plant. Z3–7

***N. juncifolius*.** See *N. assoanus*.

***N.* 'Kilworth'**, Div. 2. Vigorous, late spring-flowering bulb. H 15in (38cm). Flowers have pointed, milk-white petals and dark reddish-orange cups with green eyes. Is effective in large groups. Z3–7

***N.* 'Kingscourt'**, Div. 1. Sturdy, mid-spring-flowering bulb. H 17in (42cm). Flowers have flanged, flared, rich gold trumpets with broad, rounded, paler gold petals. Z3–7

***N.* 'Kokopelli'**, Div. 7. Mid-spring-flowering bulb. H 13in (33cm). Each stem bears 2–4 yellow flowers, 1½in (4cm) across. Trumpets are slightly darker and tinged green at the base when young. Naturalizes well. Z4–8

***N.* 'Liberty Bells'** (illus. p.405), Div. 5. Sturdy, mid-spring-flowering bulb. H 1ft (30cm). Paired, nodding flowers, 9cm (3½in) across, are slightly fragrant and clear lemon yellow. Z3–7

***N.* 'Little Beauty'**, Div. 1. Dwarf, early-spring-flowering bulb. H 5½in (14cm). Small flowers, 1¼in (3cm) across, have creamy white petals and a yellow trumpet. Suits rock gardens and containers. Z3–7

***N.* 'Little Witch'**, Div. 6. Early to mid-spring-flowering bulb. H 9in (22cm). Bears golden-yellow flowers with reflexed petals and trumpet-shaped cups. Z3–7

***N.* 'Manly'**, Div. 4. Early- to mid-spring-flowering bulb. H 1½ft (45cm). Produces double flowers consisting of whorls of greenish-yellow petals, interspersed with bright orange trumpet segments. Z3–7

N.* x *medioluteus, syn. *N.* x *biflorus* (Primrose peerless), Div. 13. Mid-to late-spring-flowering bulb. H 16in (40cm). Bears neat, medium-sized, sweetly scented flowers of rounded outline, with overlapping, almost pure white petals and a small, shallow, primrose-yellow, bowl-shaped cup. Usually twin-headed. Z3–9

***N.* 'Menehay'**, Div. 11. Mid-spring-flowering bulb. H 2ft (60cm). Flowers are 3½in (9cm) across. Broad, spreading, deep yellow perianth segments form a double triangle around the 2-lobed, frilled, bright reddish orange corona segments. Z4–8

***N.* 'Merlin'**, Div. 3. Mid-spring-flowering bulb. H 1½ft (45cm). Flowers have broad, rounded, glistening white petals and relatively large, almost flat, rich gold cups, each with a small, green eye and a broad, lightly ruffled, orange-red rim. Excellent for exhibition. Z3–7

N. minimus of gardens. See *N. asturiensis*.

***N.* 'Minnow'**, Div. 8. Robust, early to mid-spring-flowering bulb. H 7in (18cm). Bears a cluster of 4 or more fragrant flowers per stem, each with rounded, creamy-yellow petals and a lemon cup. Increases freely; will naturalize in grass. Suitable for rockeries and can be grown indoors as a potted plant. Z3–7

N. minor, syn. *N. nanus* of gardens, Div. 13. Early spring-flowering bulb. H 4–6in (10–15cm). Flowers have slightly overlapping, soft yellow petals and almost straight, darker yellow trumpets with frilled rims. Z4–8. **subsp. *pumilus*** see *N. pumilus*.

N. minor of gardens. See *N. pumilus*.

***N.* 'Mission Bells'**, Div. 5. Mid-spring-flowering bulb. H 10in (25cm). Stems bear 1–3 white flowers, with matching trumpets that have greenish centers. Z3–7

***N.* 'Mount Hood'** (illus. p.404), Div. 1. Vigorous, mid-spring-flowering bulb. H 1½ft (45cm). Trumpet-shaped, creamy-yellow flowers soon fade to white. Z3–7

N. nanus, Div. 13. Early spring-flowering bulb. H 5in (12cm). Flowers have twisted, cream petals and a stout, straight, dull yellow trumpet with a frilled rim. Leaves are particularly broad. Suitable for naturalizing. Z3–7

N. nanus of gardens. See *N. minor*.

N. obvallaris, syn. *N. pseudonarcissus* subsp. *obvallaris* (Tenby daffodil), Div. 13. Sturdy, early spring-flowering bulb. H 1ft (30cm). Stiff stems bear gold flowers with short petals and broad trumpets. Z3–7

N.* x *odorus (Campernelle jonquil), Div. 13. Robust, mid-spring-flowering bulb. H 10in (25cm). Usually bears 2 richly fragrant, dark gold flowers. Z3–7. **'Rugulosus'**, Div.7, H 11in (28cm), is more vigorous and produces up to 4 small-cupped, rich gold flowers.

***N.* 'Panache'** (illus. p.405), Div. 1. Mid-spring-flowering bulb. H 16in (40cm). Bears very large, pure white flowers with well-balanced trumpets tinged green at the bases, and broad overlapping petals. Z3–7

***N.* 'Paper White Grandiflorus'**, syn. *N. papyraceus* 'Grandiflorus', *N.* 'Paper White Snowflake', Div. 8. Winter- to mid-spring-flowering bulb. H 28in (70cm). Bears 10 or more long-lived, very fragrant, star-shaped, glistening white flowers, each with long, spreading petals and a small, flanged cup containing conspicuous, saffron-yellow stamens. Produces flowers continuously through winter indoors. Z3–7

***N.* 'Paper White Snowflake'.** See *N.* 'Paper White Grandiflorus'.

***N. papyraceus* 'Grandiflorus'.** See *N.* 'Paper White Grandiflorus'.

***N.* 'Passionale'** (illus. p.405), Div. 2. Mid-spring-flowering bulb. H 1½ft (45cm). Each flower has milk-white petals and a long, flanged, apricot-tinged, pink cup. Z3–7

***N.* 'Pencrebar'** (illus. p.405), Div. 4. Mid-spring-flowering bulb. H 7in (18cm). Fragrant flowers are small, rounded, and fully double, often in pairs. Outer petaloids and large, inner ones are pale gold, and evenly interspersed with darker ones. Z3–7

***N.* 'Pipit'** (illus. p.405), Div. 7. Mid-spring-flowering bulb. H 10in (25cm). Bears up to 3 scented flowers per stem, slightly greenish sulphur-yellow on opening. The ruffled, flared cup and the base of the overlapping petals become almost white at maturity. Z4–8

N. poeticus (Poet's daffodil), Div. 13. Variable, late spring-flowering bulb. H 9–17in (22–42cm). Each fragrant flower comprises glistening white petals and a small, shallow, yellow or orange cup with a red rim. Excellent for naturalizing in moist turf, although slow to establish. Z3–7. **'Flore Pleno'** see *N.p.* 'Plenus'. **'Plenus'** (syn. *N.* 'Albus Plenus Odoratus'; *N.p.* 'Flore Pleno'), H 16in (40cm), has loosely double, pure white flowers, with inconspicuous, greenish-yellow or orange centers, in late spring or early summer. Good for cutting. **var. *recurvus*** (Old pheasant's eye), H 14in (35cm), bears larger, long-lasting flowers with strongly swept-back petals and very shallow, greenish-yellow cups, with crimson rims, in late spring. Z3–7

***N.* 'Portrush'**, Div. 3. Late spring- to early summer-flowering bulb. H 14in (35cm). Produces small flowers, each with green-tinged, glistening, milk-white petals and a small, shallow, flanged, creamy-white cup with a bright green eye. Z3–7

***N.* 'Precocious'**, Div. 2. Vigorous, mid-spring-flowering bulb. H 16in (40cm). Bears flowers, 4in (10cm) across, with broadly ovate, spreading, slightly concave, white perianth segments. Deep reddish rose-pink cups are bowl-shaped, expanded at the mouths, and heavily frilled. Z4–8

***N.* 'Pride of Cornwall'**, Div.8. Mid-spring-flowering bulb. H 15in (38cm). Bears several large, fragrant flowers, each with milk-white petals and a rich yellow cup shading to an orange-red rim outside. Excellent for cutting. Z3–7

N. pseudonarcissus (Lent lily, Wild daffodil), Div. 13. Extremely variable, early spring-flowering bulb. H 6–14in (15–35cm). Nodding flowers have overlapping, straw-yellow petals and large, darker yellow trumpets. Ideal for naturalizing. Z3–7. **subsp. *obvallaris*** see *N. obvallaris*.

N. pumilus, syn. *N. minor* of gardens, *N. minor* subsp. *pumilus*, Div. 13. Early spring-flowering bulb. H 6–9in (15–22cm). Bears bright gold flowers with separated, slightly paler petals and large trumpets with lobed and frilled rims. Z3–7. **'Plenus'** see *N.* 'Rip van Winkle'.

***N.* 'Rainbow'**, Div. 2. Vigorous, mid-spring-flowering bulb. H 1½ft (45cm). White flowers have cups that are broadly banded with coppery-pink at the rim. Z3–7

***N.* 'Replete'**, Div. 4. Mid-spring-flowering bulb. H 16in (40cm). Bears double flowers with white petals, interspersed with reddish-orange trumpet fragments. Z3–7

***N. requienii*.** See *N. assoanus*.

***N.* 'Rip van Winkle'**, syn. *N. pumilus* 'Plenus', Div. 4. Early spring-flowering bulb. H 5½in (14cm). Shaggy, double flowers have densely arranged, flat, tapering, greenish-lemon petals with incurving tips. Z3–7

N. romieuxii, Div. 13. Early spring-flowering bulb. H 3–4in (8–10cm). Best grown in a frame or an alpine house. Similar to *N. bulbocodium*, but each fragrant flower has a large, almost flat, flanged cup of pale primrose. Z4–8

N. rupicola, Div. 13. Mid-spring-flowering bulb. H 6in (15cm). Similar to *N. assoanus*, but has more angled, bluish-green foliage and solitary, less scented, lemon flowers, each with a 6-lobed cup. Z4–8. **subsp. *watieri***, H 4in (10cm), bears larger, fragrant, crystalline-textured, white flowers with shallow, lobed cups.

***N.* 'Saint Keverne'**, Div. 2. Sturdy, early to mid-spring-flowering bulb. H 16in (40cm). Solitary flowers have clear rich golden petals and slightly darker cups of almost trumpet proportions. Z3–7

***N.* 'Saint Patrick's Day'**, Div. 2. Mid-spring-flowering bulb. H 16in (40cm). Flowers have broad, flattish, greenish-yellow petals and large cups with dark yellow margins. Z3–7

***N.* 'Salome'**, Div. 2. Mid-spring-flowering bulb. H 1½ft (45cm). Flowers have white petals and long, pink, trumpet-shaped cups, which are slightly frilled with warm gold at the rim. Good for cutting. Z3–7

***N.* 'Scarlet Gem'**, Div. 8. Mid-spring-flowering bulb. H 14in (35cm). Bears 7–8 scented flowers with golden petals and scarlet or deep orange-red cups. Z3–7

***N.* 'Segovia'**, Div. 3. Mid-spring-flowering bulb. H 6in (15cm). Pure white flowers have small lemon-yellow cups. Z3–7

***N.* 'Sempre Avanti'**, Div. 2. Early to mid-spring-flowering bulb. H 16in (40cm). Flowers have creamy-white petals and contrasting yellow cups. Suitable for naturalizing in grass. Z3–7

***N.* 'Serena Lodge'**, Div. 4. Mid- to late-spring flowering daffodil. H 20in (50cm). Double flowers, 4¼in (10.5cm) across, have broadly ovate, milk-white petals in whorls, interspersed with short, deep buff-yellow corona segments. Z4–8

***N.* 'Shepherds Hey'**, Div. 7. Mid-spring-flowering bulb. H 10in (25cm). Produces two or more fragrant flowers per stem, with golden-yellow overlapping petals and small fluted cups. Z3–7

***N.* 'Shining Light'**, Div. 2. Mid-spring-flowering bulb. H 17in (42cm). Refined, well-balanced flowers have overlapping, smooth, clear, pale golden-yellow petals, The slightly ribbed, rich orange-red cup has a darker, lightly dentate rim. Excellent for exhibition. Z3–7

***N.* 'Silver Chimes'**, Div. 8. Mid- to late spring-flowering bulb. H 13in (32cm). Bears up to 10 fragrant flowers, each with broad, milk-white petals and a straight, shallow, creamy-primrose cup. Thrives in a warm site. Z4–8

***N.* 'Sinopel'**, Div. 3. Mid-spring-flowering bulb. H 1½ft (45cm). Flowers have pure white petals and green shallow-bowled cups, edged with deep yellow. Z3–7

***N.* 'Sir Winston Churchill'** (illus. p.405), Div. 4. Mid-spring-flowering bulb. H 16in (40cm). Produces fragrant, double, white flowers with orange-yellow segments in the centers. Z3–7

***N.* 'Slim Whitman'**, Div. 2. Early to mid-spring-flowering bulb. H 16in (40cm). Flowers have ivory white petals and orange cups with a sulphur-yellow rim. Z3–7

***N.* 'Spellbinder'** (illus. p.405), Div. 1. Early spring-flowering bulb. H 17in (42cm). Long-lasting, bright sulphur-yellow flowers each have a slender, flanged trumpet, reversing to palest sulphur-white inside, except for the lobed, rolled-back rim, which is tinged with lemon. Z3–7

***N.* 'Spoirot'**, Div. 10. Vigorous, late winter- to early spring-flowering bulb. H 13in (33cm). Bears greenish white flowers, 1½in (4cm) across, with narrow, acute, separated perianth segments and deep, bowl-shaped coronas. Z4–8

***N.* 'Stint'**, Div. 5. Mid-spring-flowering bulb. H 1ft (30cm). Produces two or more pendent bright yellow flowers with pale lemon yellow cups. Z3–7

***N.* 'Stratosphere'** (illus. p.405), Div. 7. Mid-spring-flowering bulb. H 26in (65cm). Bears usually 3 fragrant flowers, each with rich golden petals and a darker gold cup. Excellent for exhibition. Z3–7

***N.* 'Sun Disc'**, Div. 7. Mid-spring-flowering bulb. H 7in (18cm). Each stem bears 2 or more rounded, sweetly scented flowers, with yellow petals and small flat cups. Z3–7

***N.* 'Suzy'** (illus. p.405), Div. 7. Robust, mid-spring-flowering bulb. H 16in (40cm). Bears 1 or 2 long-lasting, large, fragrant flowers, each with clear golden petals and a large, flanged, rich tangerine cup. Suitable for cutting. Z3–7

***N.* 'Sweetness'**, Div. 7. Early spring-flowering bulb. H 16in (40cm). Sweetly fragrant flowers, occasionally borne in

pairs, have intense, golden-yellow petals and a darker, waved cup of strong substance. Good for cutting. Z4–8
***N.* 'Tahiti'** (illus. p.405), Div. 4. Robust, mid-spring-flowering bulb. H 1½ft (45cm). Solitary, loosely double flowers have golden petals and petaloids, interspersed with short, orange, inner petaloids. Z4–8
N. tazetta (Bunch-flowered daffodil, Polyanthus daffodil), Div. 13. Extremely variable, late fall- to mid-spring-flowering bulb. H 12–16in (30–40cm). Bears 12 or more fragrant flowers, usually with slender, white or yellow petals and shallow, white or yellow cups. Z4–8
***N.* 'Tête-à-Tête'**, Div. 12. Early spring-flowering bulb. H 6in (15cm). Long-lasting flowers each have reflexed, rich golden petals and a square, flanged, warm yellowish-orange cup. Should be twin-flowered. Is susceptible to viruses. Z4–8
***N.* 'Thalia'** (illus. p.404), Div. 5. Vigorous, mid-spring-flowering bulb. H 14in (35cm). Bears 2 long-lived, charming, milk-white flowers per stem, each with irregularly formed, often propeller-shaped petals and a flanged, bold cup. Z4–8
***N.* 'Tresamble'**, Div. 5. Sturdy, early spring-flowering bulb. H 16in (40cm). Bears 2–3 flowers per stem, each with milk-white petals and a flanged, creamy-white cup that is paler at the rim. Z4–8
***N.* 'Trevithian'**, Div. 7. Vigorous, mid-spring-flowering bulb. H 1½ft (45cm). Produces 1–3 large, fragrant flowers, rounded and soft primrose, each with broad petals and a short cup. Z4–8
N. triandrus (Angel's tears), Div. 13. Early spring-flowering bulb. H 5in (12cm). Bears nodding, milk-white flowers, each with narrow, reflexed petals and a fairly long, straight-sided cup. Suitable for rockeries and is a good potted plant. Z4–8
***N.* 'Tripartite'**, Div. 11a. Mid-spring-flowering bulb. H 1½ft (45cm). Produces 1–3 lemon and golden-yellow flowers per stem, each with split trumpets that sit flat against the petals. Z4–8
***N.* 'Trousseau'**, Div. 1. Early spring-flowering bulb. H 17in (42cm). Flowers each have milk-white petals and a straight, flanged, soft lemon trumpet, with a flared, lobed rim turning rich creamy-buff, tinged with pale pink. Z4–8
***N.* 'Tudor Minstrel'**, Div. 2. Mid-spring-flowering bulb. H 17in (42cm). Flowers have white, pointed petals and slender, chrome-yellow cups, flanged outward. Z4–8
***N.* 'Verger'**, Div. 3. Mid-spring flowering bulb. H 16in (40cm). Flowers have pure white petals and small, shallow, deep orange-red cups. Z4–8
***N.* 'Warbler'**, Div. 6. Mid-spring-flowering bulb. H 14in (35cm). Flowers, to 2¾in (7cm) across, have broad, strongly reflexed, deep yellow petals, touched green at the base. Deep yellow, angled, cylindrical trumpets are flared and frilled at the mouth, with orange at the rims. Z4–8
***N.* 'White Lady'**, Div. 3. Vigorous, mid-spring-flowering bulb. H 1½ft (45cm). Large, scented flowers have spreading, slightly overlapping, pure white petals. The small, shallow, heavily frilled cup is strong primrose-yellow on opening, maturing to creamy-yellow. Z4–8
***N.* 'White Lion'**, Div. 4. Tall mid-spring-flowering bulb. H 28in (70cm). Produces double white flowers interspersed with bright yellow. Z4–8
***N.* 'White Marvel'**, Div. 5. Mid-spring-flowering bulb. H 14in (35cm). Produces two or more pendent, fragrant, double white flowers per stem. Z4–8
***N.* 'Woodland Star'**, Div. 3. Mid-spring-flowering bulb. H 20in (50cm). Large flowers have white petals and small, bowl-shaped, deep red cups. Z4–8
***N.* 'W.P. Milner'**, Div. 1. Early spring-flowering bulb. H 9in (23cm). Nodding flowers have slender, twisted, light creamy-yellow petals. The flared, pale lemon trumpet, ages to palest sulphur. Z4–8
***N.* 'Yellow Cheerfulness'**, Div. 8. Mid-spring-flowering bulb. H 1½ft (45cm). Produces multiheaded stems of fragrant yellow blooms. Z4–8

NAUTILOCALYX

GESNERIACEAE

Genus of evergreen, erect, bushy perennials, grown for their flowers and foliage. Frost tender. Requires high humidity, partial shade, and well-drained soil; avoid waterlogging, especially in winter. Propagate by stem cuttings in summer or by seed, if available, in spring.
N. bullatus, syn. *N. tessellatus*. Evergreen, erect, bushy perennial. H 2ft (60cm), S 14in (35cm). Narrowly ovate, wrinkled leaves, to 9in (23cm) long, are dark green with a bronze sheen above, reddish-green beneath. Clusters of small, tubular, white-haired, pale yellow flowers are produced in the leaf axils mainly in summer. Z12 (min. 59°F/15°C)
N. lynchii illus. p.471.
***N. tessellatus*.** See *N. bullatus*.

***Neanthe bella*.** See *Chamaedorea elegans*.

NECTAROSCORDUM

ALLIACEAE/LILIACEAE

Genus of summer-flowering bulbous perennials, related to *Allium* and *Lilium*, with long, linear, erect leaves, and umbels of bell-shaped flowers. Exudes a strong garliclike smell when bruised. Stems with erect, shuttlecocklike seed heads may be dried for winter decoration. Frost hardy. Needs dappled or partial shade. Grow in rough grass or borders, in soil that is neither too dry nor waterlogged. Propagate by freely produced offsets in late summer or by seed in fall or spring.
***N. dioscoridis*.** See *N. siculum* subsp. *bulgaricum*.
N. siculum* subsp. *bulgaricum, syn. *N. dioscoridis*, illus. p.385.

NEILLIA

ROSACEAE

Genus of deciduous shrubs and subshrubs, grown for their graceful habit and profuse clusters of small flowers. Fully hardy. Needs sun or partial shade and fertile, well-drained soil. After flowering, established plants benefit from having some older shoots cut to base. Propagate by softwood cuttings in summer. Remove suckers in fall.
***N. affinis*.** Upright shrub with arching, red-brown branches. H and S 6ft (2m). Ovate to elliptic leaves are sharply toothed and have long, tapered points. From late spring to early summer, bears racemes, 3in (8cm) long, of 10–15, bell-shaped, pink flowers, ¼in (5mm) across. Z5–9
***N. longiracemosa*.** See *N. thibetica*.
N. thibetica, syn. *N. longiracemosa*, illus. p.133.

NELUMBO

NELUMBONACEAE

Genus of deciduous, perennial, marginal water plants, grown for their foliage and flowers. Frost tender. Needs an open, sunny position and 2ft (60cm) depth of water. Remove fading foliage; flowers may be left to develop into decorative seed pods. Divide overgrown plants in spring. Propagate species by seed and selected forms by division in spring.
N. lutea (American lotus). Vigorous, deciduous, perennial, marginal water plant. H 6ft (2m), S indefinite. Rounded, blue-green leaves, prominently veined beneath, develop on stout stems, 1–2ft (30–60cm) long. Large, chalice-shaped, yellow flowers, to 10in (25cm) across, are borne in summer. Z10–12 (min. 45°F/7°C)
***N.* 'Mrs. Perry D. Slocum'.** Aquatic perennial. H 4–5ft (1.2–1.5m), S indefinite. Produces rounded, flat or wavy margined, glaucous, gray-green leaves, 32in (80cm) across, on stalks to 4½ft (1.4m) long. In summer, bears deep pink flowers, to 1ft (30cm) across, turning yellow over a period of several days. Z10–12 (min. 41°F/5°C)
N. nucifera (Sacred lotus), illus. p.438. **'Alba Grandiflora'**, H 4–6ft (1.2–1.8m), S 1.2m (4ft), is a vigorous, deciduous, perennial, marginal water plant. Has very large, rounded, wavy-margined, dark green leaves, on sturdy stems. Fragrant, chalice-shaped, white flowers, 9–10in (22–25cm) across, are borne in summer. Z10–12 (min. 45°F/7°C)
***N.* 'Perry's Giant Sunburst'.** Aquatic perennial. H 4–5½ft (1.2–1.7m), S indefinite. Has rounded, flat or wavy margined, glaucous, gray-green leaves, 1½ft (45cm) across, on stalks to 5½ft (1.7m) long. In summer, bears fragrant, double, cream flowers, to 14in (35cm) across, with pale green outer petals, golden yellow stamens, yellow receptacles. Z10–12 (min. 41°F/5°C)
***N.* 'Pink n' Yellow'.** Deciduous perennial, marginal water plant, smaller than other cultivars. H 1½ft (45cm), S indefinite. Produces rounded, mid-green leaves. Pink-tipped, pale yellow flowers, up to 2in (5cm) across, are borne on long stems in summer. Z10–12 (min. 41°F/5°C)

NEMATANTHUS

GESNERIACEAE

Genus of epiphytic, perennial, evergreen, soft-stemmed, subshrubs, grown for their flowers and foliage. Frost tender. Requires partial shade and humus-rich, moist but well-drained soil. Water potted specimens moderately with soft water, allowing soil almost to dry out between applications. Tip prune young plants to stimulate branching. Propagate by softwood or greenwood stem-tip cuttings in spring.
N. gregarius, syn. *Hypocyrta radicans*, *N. radicans*, illus. p.459.
***N. radicans*.** See *N. gregarius*.
N. strigillosus, syn. *Hypocyrta strigillosa*. Evergreen, prostrate subshrub. H 5ft (1.5m), S 3ft (90cm). Elliptic, slightly cupped leaves are clothed in dense down. Small, tubular, orange and yellow flowers are produced in leaf axils mainly from spring to fall. Z11–12 (min. 50–59°F/10–15°C).

NEMESIA

SCROPHULARIACEAE

Genus of annuals, perennials, and evergreen subshrubs, often grown as summer bedding and greenhouse plants. Half to frost hardy. Prefers sun and fertile, well-drained soil. After flowering, cut back stems to promote new buds. For a bushy habit, pinch out growing tips of young plants. Propagate by seed sown under glass in early spring, or outdoors in late spring.
***N.* Amelie ('Fleurame')** illus. p.301.
***N.* Aroma Series.** Compact, bushy perennials, grown as annuals. H and S 10–14in (25–35cm). In summer and fall, they bear clusters of fragrant, bicolored flowers. Z9–11. **Aroma Banana Split** has butter yellow and white flowers with deeper yellow centers. **Aroma Rhubarb and Custard** produces yellow and violet-purple flowers.
***N.* Berries and Cream ('Fleurbac').** Compact, upright perennial. H and S 14in (35cm). Has ovate, mid-green leaves and from late spring to early fall, bears fragrant, 2-lipped flowers, ¾in (2cm) across, with rich purple upper petals and yellow-throated, white lower petals. Z9–11
***N.* Blue Lagoon ('Pengoon')**, syn. *N.* Maritana Series 'Blue Lagoon'. Rather upright, twiggy perennial, grown as an annual. H and S 1ft (30cm). Slightly fragrant, 2-lipped, blue-purple flowers, ¾in (2cm) across, are borne in dense spikes in summer and fall, above lance shaped, slightly scalloped, mid-green leaves. Prefers moist soil. Z9–11
***N.* Carnival Mixed** illus. p.307.
***N.* Maritana Series 'Blue Lagoon'.** See *N.* Blue Lagoon ('Pengoon').
***N.* Sunsatia Series Sunsatia Mango ('Inupyel')** illus. p.320.

NEMOPHILA

HYDROPHYLLACEAE

Genus of annuals, useful for rock gardens and for edging. Fully hardy. Grow in sun or partial shade and in fertile, well-drained soil. Propagate by seed sown outdoors in spring or early fall. Prone to aphids.
***N. insignis*.** See *N. menziesii*.
N. maculata (Five-spot baby) illus. p.299.
N. menziesii, syn. *N. insignis* (Baby blue-eyes), illus. p.314.

NEOBUXBAUMIA

CACTACEAE

Genus of columnar or treelike perennial cacti with cylindrical stems, prickly spines and usually low-set ribs. Nocturnal white, pink, or red flowers, produced in summer, are followed by angular fruits, which open like stars when ripe. Frost tender. Requires a sunny position and poor to moderately fertile, sharply drained, gritty soil. Propagate by seed in spring.

N. euphorbioides, syn. *Lemaireocereus euphorbioides*, *Rooksbya euphorbioides*, illus. p.494.

***Neochilenia chilensis*.** See *Eriosyce chilensis*.

Neochilenia mitis of gardens. See *Eriosyce napina*.

NEOLITSEA

LAURACEAE

Genus of evergreen trees and shrubs, grown for their foliage. Frost hardy. In cold areas needs shelter from strong winds; does best against a south-or west-facing wall. Requires sun or partial shade and fertile, well-drained soil. Propagate by semiripe cuttings in late summer.

***N. glauca*.** See *N. sericea*.

N. sericea, syn. *Litsea glauca*, *N. glauca*. Evergreen, broadly conical, dense tree or shrub. H to 20ft (6m), S to 10ft (3m) or more. Narrowly ovate, pointed leaves are glossy, mid-green above, white beneath, and covered with silky, brown hairs when young. Small, star-shaped, yellow flowers are borne in late summer. Z8–11

NEOLLOYDIA

CACTACEAE

Genus of spherical to columnar, perennial cacti with dense spines and short tubercles in spirals. Most species are exceptionally difficult to cultivate unless grafted. Frost tender. Requires full sun and well-drained soil. Water sparingly from spring to fall; keep dry in winter. Propagate by seed in spring or summer.

N. conoidea, syn. *Coryphantha conoidea, Mammillaria conoidea*, illus. p.483.

***N. macdowellii*.** See *Thelocactus macdowellii*.

NEOMARICA

IRIDACEAE

Genus of evergreen, irislike, rhizomatous, herbaceous perennials with clusters of short-lived flowers in summer. Frost tender. Needs partial shade and fertile, moist, preferably humus-rich soil. Water moderately in summer; reduce water in winter, but do not allow plants to dry out. Propagate by seed or by division in spring.

N. caerulea illus. p.393.

NEOPANAX

ARALIACEAE

Small genus of evergreen shrubs, grown for their architectural habit and black fruit. Half hardy to frost hardy. Grow in a sheltered position in sun or partial shade in fertile, well-drained soil. Propagate by semiripe cuttings in summer or by seed in fall.

N. arboreum, syn. *Pseudopanax arboreus* (Five finger). Evergreen, round-headed, stout-branched tree. H 12–25ft (4–8m), S 8–15ft (2.5–5m). Large, glossy, dark green leaves are divided into 5 or 7 oblong leaflets. In summer, bears tiny, honey-scented, green flowers, followed by rounded, purplish-black fruits on female plants. Z9–11

N. laetus. Evergreen, round-headed, stout-branched tree or shrub. H 20ft (6m), S 3m (10ft). Produces large, long-stalked, leathery leaves with 5 or 7 oblong, dark green leaflets, to 1ft (30cm) long. Tiny, greenish-purple flowers, to 8in (20cm) across, are borne in summer, followed by rounded, purplish-black fruits on female plants. Z9–11

***Neoporteria*.** See *Eriosyce*.

NEOREGELIA

BROMELIACEAE

Genus of evergreen, rosette-forming, epiphytic perennials, grown for the striking color of their central leaves and bracts when flowering. Frost tender. Requires partial shade and a rooting medium of equal parts humus-rich soil and sphagnum moss, bark or plastic chips used for orchid culture. Water moderately, using soft water, during the growing season, sparingly at other times, and keep rosette centers filled with water from spring to fall. Propagate by offsets in spring or summer.

N. carolinae, syn. *Aregelia carolinae*, *Nidularium carolinae* (Blushing bromeliad). Evergreen, spreading, open-rosetted, epiphytic perennial. H 8–12in (20–30cm), S 16–24in (40–60cm). Has dense rosettes of strap-shaped, toothed, lustrous, green leaves. Each mature rosette bears a compact cluster of tubular, blue-purple flowers, surrounded by red bracts, usually in summer. Z11–12 (min. 50°F/10°C).

'Tricolor' (syn. *N.c.* f. *tricolor*) has leaves striped ivory-white, rose-red, and green.

f. *tricolor* *see N.c.* 'Tricolor'.

N. concentrica (illus. p.471). Evergreen, spreading, basal-rosetted, epiphytic perennial. H to 1ft (30cm), S to 28in (70cm). Very broadly strap-shaped to ovate, glossy, dark green leaves, with spiny, black teeth and usually with dark blotches, form dense rosettes. In summer, a compact cluster of tubular, pale blue flowers, surrounded by pinkish-lilac bracts, is produced at the heart of each mature rosette. Z11–12 (min. 50°F/10°C).

var. *plutonis* (syn. *N.c.* 'Plutonis') has bracts flushed with red. **'Plutonis'** see *N.c.* var. *plutonis*.

NEPENTHES

Pitcher plant

NEPENTHACEAE

Genus of evergreen, insectivorous, mostly epiphytic perennials, leaves adapted to form pendulous, lidded, colored pitchers that trap and digest insects. Suitable for hanging baskets. Frost tender. Needs a humid atmosphere, partial shade, and moist, fertile soil with added peat and moss. Propagate by seed in spring or by stem cuttings in spring or summer.

N.* x *hookeriana illus. p.473.

***N. rafflesiana*.** Evergreen, epiphytic, insectivorous perennial. H to 28ft (9m), S 3–4ft (1–1.2m). Has lance-shaped, dark green leaves. Greenish-yellow pitchers, to 10in (25cm) long, are mottled purple and brown, each with a striped rim and a spurred lid. Racemes of inconspicuous, green flowers, are borne intermittently. Z12 (min. 59°F/15°C)

NEPETA

Catmint

LAMIACEAE/LABIATAE

Genus of summer-flowering perennials, useful for edging, particularly where they can tumble over paving. Fully hardy to half hardy. Grows in sun or partial shade and any well-drained soil. Propagate by division in spring or stem-tip or softwood cuttings in spring or summer, species only by seed in fall. Cats may be attracted to this plant, rolling on it and crushing it. Leaves can be dried and used in cat toys.

***N.* 'Blue Beauty'.** See *N. sibirica* 'Souvenir d'André Chaudon'.

N.* x *faassenii illus. p.270.

***N. grandiflora*.** Neat, erect perennial. H 30in (75cm), S 1ft (30cm). Has slightly hairy stems and ovate, round-toothed, light green leaves, with heart-shaped bases. In summer, bears racemes of small, hooded, blue flowers. H6. **'Bramdean'** has an upright, open habit and produces deep indigo-blue flowers.

***N. macrantha*.** See *N. sibirica*.

***N. nervosa*.** Clump-forming perennial. H 45–60cm (1½–2ft), S 1ft (30cm). Forms a mound of narrowly oblong to lance-shaped, pointed, prominently veined, mid-green leaves. Dense racemes of small, tubular, pale blue flowers are produced from midsummer to early fall. Z4–9

***N. racemosa*.** Spreading to upright perennial. H to 1ft (30cm), S to 1½ft (45cm). Has ovate, scalloped, finely hairy, aromatic, mid-green leaves, with heart-shaped bases. In summer, bears racemelike, whorled cymes of deep violet- to lilac-blue flowers. Z3–8. **'Walker's Low'** is robust and neat-growing, with purplish blue flowers.

N. sibirica, syn. *Dracocephalum sibiricum*, *N. macrantha*. Erect, leafy perennial. H 3ft (90cm), S 1½ft (45cm). Bears long, whorled cymes of blue to lavender-blue flowers, in mid- and late summer. Leaves are dark green and aromatic. Z4–8. **'Souvenir d'André Chaudron'** (syn. *N.* 'Blue Beauty') bears dark lavender-blue flowers above toothed, gray leaves.

***N.* 'Six Hills Giant'** illus. p.240.

NEPHROLEPIS

NEPHROLEPIDACEAE/OLEANDRACEAE

Genus of evergreen or semievergreen ferns. Frost hardy to frost tender. Needs a shady position. Prefers moist soil, but is extremely tolerant of both drought and waterlogging. Remove fading fronds and divide regularly. Propagate by division in summer or early fall.

***N. cordifolia*.** Semievergreen fern. H 32in (80cm), S 5ft (1.5m). Has narrowly lance-shaped, arching, dark green fronds with rounded, finely serrated pinnae. Z9–11

N. exaltata (Sword fern) illus. p.478.

NEPHTHYTIS

ARACEAE

Genus of evergreen, tufted perennials, with horizontal, creeping rhizomes, grown for their foliage. Frost tender. Requires a humid atmosphere, moist, humus-rich soil, and partial shade. Propagate by division in spring or summer.

***N. afzelii*.** Evergreen, rhizomatous, creeping perennial. H to 30in (75cm), S indefinite. Has tufts of arrow-shaped, lobed, dark green leaves, to 10in (25cm) long. Intermittently bears a hooded, greenish spathe, enclosing a green spadix, followed by spherical, orange fruits. Z12 (min. 59°F/15°C)

***N. triphylla* of gardens.** See *Syngonium podophyllum*.

NERINE

AMARYLLIDACEAE

Genus of bulbs, some evergreen, grown for their spherical heads of wavy-petaled, pink to red, occasionally white, flowers. Most flower in fall before leaves emerge. Frost to half hardy. Needs full sun and light, sandy soil. Plant in early fall. Dislikes being disturbed. Water until leaves die down, then dry off. Propagate by seed when fresh or divide offsets in fall or when leaves have died down. ⓘ All parts may cause mild stomach upset if ingested.

***N.* 'Baghdad'.** Fall-flowering bulb. H 2ft (60cm), S 3in (8cm). Leaves are strap-shaped, semierect, and basal. Bears crimson flowers, paler toward centers; long, narrow petals have recurved tips and crisped margins. Z10–11

***N.* 'Blanchefleur'.** Fall-flowering bulb. H 20in (50cm), S 3in (8cm). Produces strap-shaped, semierect, basal leaves and a tight head of 5–10 pure white flowers. Upper parts of petals are twisted. Z10–11

N. bowdenii illus. p.413. **'Alba'** (syn. *N.b.* f. *alba*) illus. p.413. **f. *alba*** see *N.b.* 'Alba'.

'Isabel' is a fall-flowering bulb. H 20in (50cm), S 3in (8cm). Bears umbels of dark rose-pink flowers with wavy, recurved petals. Strap-shaped, semierect, basal leaves persist during winter and die down in spring. Z8–10. **'Nikita'** (syn. *N.* 'Nikita'), H 1½ft (45cm), S 3in (8cm), has loose umbels of funnel-shaped, pale pink flowers with wavy-margined, recurved petal tips.

'Rowie' bears umbels of soft apricot-pink flowers with recurved petal tips.

'Stephanie' has lilylike, very pale pink flowers with narrow, recurved petals.

***N.* 'Corusca Major'.** See. *N. sarniensis* var. *corusca* 'Major'.

***N. crispa*.** See *N. undulata* Crispa Group.

***N. filifolia*.** Fall-flowering bulb. H 1ft (30cm), S 2in (5cm). Has threadlike, semierect leaves in a basal tuft. Slender stem produces pale pink flowers with narrow petals. Z9–11

***N. flexuosa*.** See *N. undulata* Flexuosa Group.

***N.* 'Fothergillii Major'.** Late summer- to early fall-flowering bulb. H 20in (50cm), S 5–6in (12–15cm). Leaves are strap-shaped, semierect, and basal. Very strong stem has about 10 bright scarlet-salmon flowers with recurved petals. Z10–11

***N. masoniorum*.** Fall-flowering bulb. H 1ft (30cm), S 2in (5cm). Produces threadlike, semierect leaves in a basal tuft. Stem bears pink flowers with very crisped petal margins. Z10–11

***N.* 'Nikita'.** See *N. bowdenii* 'Nikita'.

***N.* 'Orion'** illus. p.413.

N. sarniensis (Guernsey lily) illus. p.414.

var. *corusca* 'Major' (syn. *N.* 'Corusca Major'), H 2ft (60cm), S 5–6in (12–15cm), is

a fall-flowering bulb with strap-shaped, semierect, basal leaves. Stout stems bear 10–15 scarlet-red flowers with narrow petals. Useful for cutting. Z10–11
***N. undulata* Crispa Group**, syn. *N. crispa,* illus. p.413. **Flexuosa Group,** H 16–20in (40–50cm), S 5–6in (12–15cm), is a semievergreen, fall-flowering bulb, with strap-shaped, semierect, basal leaves. Produces 10–20 pink flowers; each petal has a deeper pink mid-vein and a recurved, wavy upper half. Z9–11.
'Alba' has white flowers.

NERIUM

APOCYNACEAE

Genus of evergreen shrubs or small trees, grown for their often large clusters of colorful flowers. Frost tender. Needs full sun and well-drained soil. Water potted plants moderately when in full growth, sparingly at other times. Tip prune young plants to promote branching. Propagate by seed in spring or by semiripe cuttings in summer. ⚠ All parts are highly toxic if ingested; contact with the foliage may irritate skin.
N. oleander (Rose bay) illus. p.455.
'Flavescens Plenum', H 6–20ft (2–6m), S 3–10ft (1–3m), is an evergreen, upright, bushy shrub, with leathery, lance-shaped deep green leaves. In summer, bears clusters of salverform, double, pale yellow flowers; Z9–11. **'Little Red'** has single red flowers; Z6–10. **'Variegatum'** has leaves with white to pale yellow margins, and double pink flowers. Z10–11

NERTERA

RUBIACEAE

Genus of creeping perennials, grown for their abundant, spherical, beadlike fruits, produced in fall. Excellent for an alpine house. Half hardy. Requires a sheltered, partial shaded position in gritty, moist but well-drained, sandy soil. Resents winter wet. Propagate in spring by seed, division, or tip cuttings.
N. depressa. See *N. granadensis.*
N. granadensis (Bead plant) illus. p.373.

NICANDRA

Apple of Peru, Shoo-fly

SOLANACEAE

Genus of one species of annual producing short-lived flowers and fruiting branches that can be used for dried arrangements. Fully hardy. Requires a position in sun and fertile, moist but well-drained soil. Propagate by seed sown in spring.
N. physalodes (Apple of Peru, Shoo-fly). Fast-growing, upright, branching annual. H 3ft (90cm), S 1ft (30cm). Has ovate, serrated, mid-green leaves. From summer to early fall, bears a profusion of bell-shaped, white-throated, light violet-blue flowers, more than 1in (2.5cm) across, that last only one day. Flowers are followed by brown berries surrounded by green calyces, 1¼–1½in (3–4cm) across. Thought to repel flies, hence its name. Z7–10

Nicodemia madagascariensis. See *Buddleja madagascariensis.*

NICOTIANA

Tobacco plant

SOLANACEAE

Genus of annuals, perennials that are usually grown as annuals, and semievergreen shrubs. Frost hardy to frost tender. Needs sun or partial shade and fertile, well-drained soil. Propagate annuals and perennials by seed in early spring, shrubs by seed in spring or by semiripe cuttings in summer. ⚠ All parts may cause severe discomfort if ingested. Contact with the foliage may irritate skin.
N. affinis. See *N. alata.*
N. alata, syn. *N. affinis*, illus. p.231.
***N.* 'Baby Bella'.** Vigorous, compact, branching perennial, grown as an annual. H 2–2½ft (60–75cm), S to 1ft (30cm). Has oblong-lance-shaped, dark green leaves, to 4in (10cm) long. Bears fragrant, trumpet-shaped, deep red flowers, 1¼–1½in (3–4cm) long. Z10–11
N. glauca. Semievergreen, upright shrub. H and S 8–10ft (2.5–3m). Stout, blue-gray shoots bear narrowly ovate, fleshy, blue-gray leaves. Showy, tubular, bright yellow flowers are produced in summer and early fall. Z9–11
N. langsdorffii illus. p.316.
***N.* 'Lime Green'** illus. p.318.
***N.* x *sanderae* Cuba Series.** Compact branching perennials. H and S 1ft (30cm). Upward-facing, fragrant flowers are white, pink, deep lime green, bright red, or bicolored combining lime green and purple. Z10–11. **Domino Series** illus. p.299. **Sensation Mixed,** H 2–2½ft (60–75cm), is compact, producing fragrant, white, pink, red, purple, and lime green flowers that stay open in the daytime.
N. sylvestris. Branching, short-lived perennial, often grown as a biennial. H 5ft (1.5m), S 2ft (60cm). Bears panicles of fragrant, tubular, white flowers at the ends of stems in late summer. The sweet flower scent is strongest at night. Has long, rough, mid-green leaves that are sticky to the touch. Prefers sun. Z10–11

NIDULARIUM

BROMELIACEAE

Genus of evergreen, rosette-forming, epiphytic perennials, grown for their overall appearance. Frost tender. Requires a position in partial shade and a rooting medium of equal parts humus-rich soil and sphagnum moss or bark or plastic chips generally used for orchid culture. Using soft water, water moderately during the growing season, sparingly at other times, and keep centers of rosettes filled with water from spring to fall. Propagate by offsets in spring or summer.
N. carolinae. See *Neoregelia carolinae.*
N. fulgens (Blushing bromeliad). Evergreen, spreading, basal-rosetted, epiphytic perennial. H 8in (20cm) or more, S 16–20in (40–50cm). Has dense rosettes of strap-shaped, spiny-toothed, arching, glossy, rich green leaves. Tubular, white-and-purple flowers, almost hidden in a rosette of bright scarlet bracts, are mainly produced in summer. Z12 (min. 59°F/15°C)
N. innocentii. Evergreen, spreading, basal-rosetted, epiphytic perennial. H 8–12in (20–30cm), S 2ft (60cm). Has dense rosettes of strap-shaped, prickle-toothed, arching, dark green, sometimes reddish-green leaves, reddish-purple beneath. Tubular, white flowers, partially hidden in a rosette of bright red bracts, are borne mainly in summer. Z11–12 (min. 54°F/12°C)
N. procerum. Evergreen, spreading, basal-rosetted, epiphytic perennial. H 8–12in (20–30cm), S 30in (75cm). Strap-shaped, spiny-toothed, bright green leaves are produced in dense rosettes. Clusters of small, tubular, blue flowers are produced in summer. Z11–12 (min. 54°F/12°C)

NIEREMBERGIA

SOLANACEAE

Genus of summer-flowering perennials, sometimes grown as annuals, and deciduous or semievergreen shrubs. Frost to half hardy. Prefers sun and moist but well-drained soil. Propagate by division in spring, by semiripe cuttings in summer, or by seed in fall.
N. caerulea. See. *N. linariifolia.*
N. linariifolia, syn. *N. caerulea, N. hippomanica*. **'Purple Robe'** illus. p.312.
N. hippomanica. See *N. linariifolia.*
N. repens, syn. *N. rivularis*, illus. p.361.
N. rivularis. See *N. repens.*

NIGELLA

RANUNCULACEAE

Genus of annuals, grown for their attractive flowers, which are suitable for cutting and their ornamental seed pods. Fully hardy. Grows best in sun and fertile, well-drained soil. Deadhead plants to prolong flowering if seed heads are not required. Propagate by seed sown outdoors in spring or early fall.
N. damascena (Devil-in-a-bush, Love-in-a-mist). Fast-growing, upright annual. H 20in (50cm), S 9in (23cm). Has feathery, bright green leaves. Spurred, many-petaled, blue flowers are produced in summer, followed by inflated, rounded, green, then brown seed pods that may be cut and dried. Z9–11. **'Miss Jekyll'** illus. p.315. **'Miss Jekyll Alba'** has white flowers with pinkish centers.
Persian Jewels Group illus. p.314.

NOLANA

SOLANACEAE

Genus of annuals, perennials, and subshrubs useful for growing in hot, dry sites and rock gardens and as edging. Frost hardy to half hardy. Grow in sun and in fertile, well-drained soil. Propagate by seed sown outdoors in spring.
N. atriplicifolia. See *N. paradoxa.*
N. grandiflora. See *N. paradoxa.*
N. paradoxa, syn. *N. atriplicifolia, N. grandiflora*. Moderately fast-growing, prostrate annual. H 8–10in (20–25cm), S to 2ft (60cm). Has ovate, mid-green leaves and, in summer, funnel-shaped, purplish-blue flowers, to 2in (5cm) across, that have white-zoned, yellow throats. Z9–11

Nolina recurvata. See *Beaucarnea recurvata.*
Nolina tuberculata. See *Beaucarnea recurvata.*

NOMOCHARIS

LILIACEAE

Genus of bulbs with a lilylike habit and, in summer, loose spikes of flattish flowers, often conspicuously spotted. Fully hardy. Needs partial shade and rich, well-drained soil with a high humus content. Requires moist but not waterlogged soil in summer. Remains dormant throughout winter. Propagate by seed in winter or spring.
N. mairei. See *N. pardanthina.*
N. nana. See *Lilium nanum.*
N. pardanthina, syn. *N. mairei*, illus. p.385.
N. saluenensis. Summer-flowering bulb. H 34in (85cm), S 5–6in (12–15cm). Leafy stems have lance-shaped, scattered leaves. Bears a loose spike of 2–6 saucer-shaped, white or pink flowers, with dark purple eyes and purple spots. Z6–10

Nopalxochia ackermannii. See *Discocactus ackermannii.*

NOTHOFAGUS

Southern beech

NOTHOFAGACEAE

Genus of deciduous or evergreen trees, grown for their habit, foliage, and, in the case of deciduous species, fall color. Has inconspicuous flowers in late spring. Fully to frost hardy. Requires sun or partial shade and, because it is not very resistant to strong winds, should have the shelter of other trees. Prefers deep, fertile, moist but well-drained soil; is not suitable for shallow, chalky soil. Propagate by seed in fall.
N. alpina, syn. *N. procera* (Rauli), illus. p.64.
N. antarctica (Antarctic beech, Nirre). Deciduous, broadly conical tree, sometimes with several main stems. H 50ft (15m), S 30ft (10m). Small, ovate, crinkly-edged, glossy, dark green leaves turn yellow in fall. Z7–10
N. betuloides illus. p.69.
N. dombeyi illus. p.68.
N. menziesii (Silver beech) illus. p.69.
N. obliqua (Roblé) illus. p.63.
N. procera. See *N. alpina.*

NOTHOLIRION

LILIACEAE

Genus of summer-flowering bulbs, related to *Fritillaria* and *Lilium*, grown for their funnel-shaped flowers. Frost hardy to half hardy. Often produces early leaves, which may be damaged by spring frosts, so grow in a cool greenhouse in areas subject to alternating mild and cold periods in spring. Prefers partial shade or full sun and humus-rich, well-drained soil. Bulb dies after flowering. Propagate in spring or fall by offsets, which take 2–3 years to reach flowering size. Alternatively propagate by seed in winter or spring.
N. campanulatum illus. p.386.

Nothopanax. See *Pseudopanax.*
Nothoscordum neriniflorum. See *Allium neriniflorum.*
Notocactus. See *Parodia.*
Notospartium. See *Carmichaelia.*

NUPHAR

NYMPHAEACEAE

Genus of deciduous, perennial, deep-water plants, grown for their floating foliage and spherical flowers. Fully to frost hardy. Grows in shade or sun and in running or still water; is often grown for a water-lily effect in conditions where true water lilies would not thrive. Remove fading foliage and flowers, and divide crowded plants. Propagate by division in spring.

N. advena. See *N. lutea* subsp. *advena*.

N. lutea (Yellow water lily) illus. p.444.

subsp. *advena* (syn. *N. advena;* American spatterdock). Deciduous, deep- water perennial. S 4ft (1.2m). Has broadly ovate, floating, mid-green leaves; central ones are occasionally erect. Small, purple-tinged, yellow flowers in summer are followed by decorative seed heads. Z3–7

Nutallia. See *Oemleria*.

NYMANIA

MELIACEAE

Genus of one species of evergreen, spring-flowering shrub, grown for its flowers and fruits. Frost tender. Needs full light and fertile, well-drained soil. Water potted specimens moderately, less when not in full growth. Propagate by seed in spring or by semiripe cuttings in summer.

N. capensis (Chinese lanterns, lapperbos) illus. p.456.

NYMPHAEA

Water lily

NYMPHAEACEAE

Genus of deciduous, summer-flowering, perennial water plants, grown for their floating, usually rounded leaves and brightly colored flowers. Fully hardy to frost tender. Needs an open, sunny position and still water; they are not suitable for streams, or positions close to fountains. Remove fading foliage to prevent it from polluting water. Plants have tuberlike rhizomes and require dividing and replanting in spring or early summer every 3 or 4 years. Most frost tender plants may be treated as annuals. May also be propagated by seed or by separating plantlets in spring or early summer. Water lily beetle and brown china-mark moth eat the foliage and can be problems. See also feature panel p.440.

***N.* 'Amabilis'.** Deciduous, perennial water plant with floating leaves. S 5–7ft (1.5–2.2m). Rounded leaves, reddish-purple when young, mature to dark green with red-margined, light green undersides. In summer, bears star-shaped, pink flowers, 6–7in (15–19cm) across, with light pink tips and dark yellow stamens. Z3–11

***N.* 'Attraction'** (illus. p.440). Deciduous, perennial water plant with floating leaves. S 4-5ft (1.2–1.5m). Has dark green leaves and, in summer, bears cup-shaped, garnet-red flowers, 6in (15cm) across, flecked white. Z3–11

***N.* 'Aurora'** (illus. p.440). Deciduous, perennial water plant with floating leaves. S to 5ft (1.5m). Olive-green leaves are mottled with purple. In summer, bears star-shaped flowers, 2in (5cm) across, cream in bud, opening to yellow, then passing through orange to blood-red. Suits a small- to medium-sized pool. Z3–11

***N.* 'Black Princess'** (illus. p.440). Deciduous, perennial water plant with floating leaves. S 4ft (1.2m). Rounded, red-bronze leaves mature to dark green. In summer, produces cup-shaped, very dark blackish-purple flowers, 3in (8cm) across, with dark orange stamens. Z3–11

***N.* 'Blue Beauty'** (illus. p.440). Deciduous, perennial water plant with floating leaves. S to 8ft (2.5m). Leaves are brown-freckled, dark green above, purplish-green beneath. Fragrant, rounded, deep blue flowers, to 1ft (30cm) across, are produced in summer. Z12 (min. 59°F/15°C).

N. capensis (Cape blue water lily). Deciduous, perennial water plant with floating leaves. S to 8ft (2.5m). Large, mid-green leaves are often splashed with purple beneath. Star-shaped, bright blue flowers, 6–8in (15–20cm) across, are borne in summer. Z12 (min. 59°F/15°C).

***N.* 'Emily Grant Hutchings'.** Deciduous, perennial water plant with floating leaves. S to 4ft (1.2m). Small, green leaves are overlaid with bronze-crimson. Cup-shaped, pinkish-red flowers, 6–8in (15–20cm) across, open during the night in summer. Z3–11

***N.* 'Escarboucle'** (illus. p.440). Deciduous, perennial water plant with floating leaves. S 5ft (1.5m). Leaves are dark green. In summer, bears cup-shaped, deep crimson flowers, 4–6in (10–15cm) across, with bright golden centers. Z3–11

***N.* 'Fabiola'.** Deciduous, perennial water plant with floating leaves. S to 5ft (1.5m). In summer, produces fragrant, peony-shaped flowers, 6–7in (15–18cm) across, with strongly flecked pink petals, above mid-green leaves. Z3–11

***N.* 'Fire Crest'** (illus. p.440). Deciduous, perennial water plant with floating leaves. S to 4ft (1.2m). Mid-green leaves are dark purple when young, with open sinuses. In summer, bears star-shaped, deep pink flowers, 6in x (6in) across, with lavender-pink inner petals, orange inner stamens, and pink outer stamens. Z3–11

***N.* 'Froebelii'** (illus. p.440). Deciduous, perennial water plant with floating leaves. S 3ft (90cm). Has rounded, pale green leaves, bronzed when young. In summer, produces cup-shaped, later star-shaped, burgundy-red flowers, 4–5in (10–12cm) across, with red stamens. Z3–11

***N.* 'Fulgens'.** See *N.* 'Laydekeri Fulgens' (Laydekeri Group).

***N.* 'General Pershing'.** Deciduous, perennial water plant with floating leaves. S 5–6ft (1.5–1.8m). Leaves are rounded, wavy-margined, olive-green and marked with purple. In summer, bears day-blooming, cup-shaped, later flat, highly fragrant, lavender-pink flowers, 8–11in (20–27cm) across, with contrasting yellow stamens. Z12 (min. 59°F/15°C)

***N.* 'Gladstoniana'.** Deciduous, perennial water plant with floating leaves. S to 3m (10ft). Leaves are mid-green. Star-shaped, white flowers, 6–12in (15–30cm) across, open in summer. Z3–11

***N.* 'Gonnère'** (illus. p.440). Deciduous, perennial water plant with floating leaves. S to 5ft (1.5m). Has bright pea-green leaves and, in summer, fragrant, rounded, white flowers, 6–8in (15–20cm) across. Z3–11

***N.* 'Helvola'.** See *N.* 'Pygmaea Helvola'.

***N.* 'James Brydon'** (illus. p.440). Deciduous, perennial water plant with floating leaves. S to 4ft (1.2m). In summer, bears fragrant, peony-shaped, orange-suffused, crimson flowers, 6–8in (15–20cm) across, above dark green, glossy leaves. Z3–11

***N.* 'Laydekeri Fulgens' (Laydekeri Group)**, syn. *N.* 'Fulgens (illus. p.440). Deciduous, perennial water plant with floating leaves. S to 5ft (1.5m). Dark green leaves are purplish-green and marked dark purple when young. In summer, bears cup-shaped, burgundy-red flowers, to 5–6in (12–15cm), with orange-red stamens. Z3–11

***N.* 'Lucida'** (illus. p.440). Deciduous, perennial water plant with floating leaves. S 5–6ft (1.5–1.8m). Has broadly ovate, mid-green leaves. In summer, bears star-shaped flowers, 5–6in (12–15cm) across, with red inner petals, pink-veined, whitish-pink outer petals, and yellow stamens. Z3–11

***N.* 'Madame Wilfon Gonnère'.** Deciduous, perennial water plant with floating leaves. S to 5ft (1.5m). Has mid-green leaves and, in summer, cup-shaped, white flowers, 6in (15cm) across, spotted with deep rose-pink. Z3–11

***N.* 'Marliacea Albida'**, syn. *N.* Marliacea Group 'Albida' (illus. p.440). Deciduous, perennial water plant with floating leaves. S to 4ft (1.2m). Deep green leaves have red or purplish-green undersides. Bears fragrant, cup-shaped, pure white flowers, 6–8in (15–20cm) across, in summer. Z3–11

***N.* 'Marliacea Chromatella'**, syn. *N.* Marliacea Group 'Chromatella' (illus. p.440). Deciduous, perennial water plant with floating leaves. S 4–5ft (1.2–1.5m). Has olive-green leaves, heavily mottled with maroon and bronze. In summer, bears cup-shaped, canary-yellow flowers, 15–20cm (6–8in) across. Z3–11

***N.* Marliacea Group 'Albida'.** See *N.* 'Marliacea Albida'.

***N.* Marliacea Group 'Chromatella'.** See *N.* 'Marliacea Chromatella'.

N. odorata* var. *minor (illus. p.440). Deciduous, perennial water plant with floating leaves. S 3–5ft (1–1.5m). Small, rounded, soft green leaves have dark red beneath. Bears fragrant, star-shaped, white flowers 3in (8cm) across, in summer. Z3–11

***N.* 'Odorata Sulphurea Grandiflora'**, syn. *N.* 'Sunrise' (illus. p.440). Deciduous, perennial water plant with floating leaves. S to 3ft (1m). Dark green leaves are heavily mottled with maroon. In summer, bears fragrant, star-shaped, yellow flowers, 4–6in (10–15cm) across. Z3–11

***N.* 'Pink Sensation'** (illus. p.440). Deciduous, perennial water plant with floating leaves. S 4ft (1.2m). In summer, bears cup-shaped, later star-shaped, pink flowers, 5–6in (12–15cm) across, with yellow inner stamens and pink outer stamens. Produces rounded, mid-green leaves, purple-green when young. Z3–11

N. pygmaea. See *N. tetragona*. **'Helvola'** see *N.* 'Pygmaea Helvola'.

***N.*'Pygmaea Helvola'**, syn. *N.* 'Helvola', *N. pygmaea* 'Helvola', *N. tetragona* 'Helvola' (illus. p.440). Deciduous, perennial water plant with floating leaves. S to 1½ft (45cm). Small, olive-green leaves have heavy purple or brown mottling. Produces star-shaped, yellow flowers, ¾–1¼in (2–4cm) across, in summer. Z3–11

***N.* 'Pygmaea Rubra'.** Deciduous, perennial water plant with floating leaves. S 2ft (60cm). Small, reddish-green young leaves mature to purplish-green. Produces cup-shaped, blood-red flowers, 5cm (2in) across, in summer. Z3–11

***N.* 'Ray Davies'.** Deciduous, perennial water plant with floating leaves. S to 5ft (1.5m). In summer, produces peony-shaped, light pink flowers, 15–18cm (6–7in) across, slightly yellow in the center, above rounded, deep green leaves. Z3–11

***N.* 'Rose Arey'** (illus. p.440). Deciduous, perennial water plant with floating leaves. S to 5ft (1.5m). Leaves are reddish-green, purple when young. In summer, bears star-shaped, deep rose-pink flowers, 10–15cm (4–6in) across, that pale with age and have a strong aniseed fragrance. Z3–11

***N.* 'Sunrise'.** See *N.* 'Odorata Sulphurea Grandiflora'.

N. tetragona, syn. *N. pygmaea* (illus. p.440). Deciduous, perennial water plant with floating leaves. S to 1ft (30cm). Has small, dark green leaves, purplish-green beneath, and, in summer, star-shaped, white flowers, 2–3cm (¾–1¼in) across. Z3–11.

'Helvola' see *N.* 'Pygmaea Helvola'.

***N.* 'Virginalis'.** Deciduous, perennial water plant with floating leaves. S to 4ft (1.2m). Pale green leaves are purple or bronze when young. Bears fragrant, star-shaped, white flowers, 4–6in (10–15cm), with yellow stamens, in summer. Z3–11

NYMPHOIDES

MENYANTHACEAE

Genus of deciduous, perennial, shallow-water plants, with floating foliage, grown for their flowers. Fully hardy to frost tender. Requires an open, sunny position. Propagate by division in spring or summer.

N. peltata, syn. *Limnanthemum nymphoides*, *L. peltatum, Villarsia nymphoides* (Water fringe), illus. p.444.

NYSSA

Tupelo

CORNACEAE/NYSSACEAE

Genus of deciduous trees grown for their attractive foliage and brilliant fall color. Inconspicuous, small, green flowers in summer are followed by small, ovoid blue fruits. Fully hardy. Needs sun or partial shade; does best in hot summers. Needs moist, neutral to acidic soil. Resents being transplanted. Propagate by softwood cuttings in summer or by seed in fall.

N. sinensis illus. p.77. **'Jim Russell'** is a broadly conical, deciduous tree, with an upright central leader. H and S 30ft (10m). Oblong to elliptic, slenderly tapered, dark green leaves are sparsely hairy and bronze-red when young, turning brilliant shades of orange, red, and yellow in fall, becoming nearly hairless when mature. Z7–9

N. sylvatica (Black gum) illus. p.66. **'Wisley Bonfire'** is a broadly conical, deciduous tree, with often pendent, lower branches. H 20m (70ft), S 30ft (10m). Produces ovate to obovate, matte or glossy, dark green leaves, to 6in (15cm) long, downy beneath when young, with short, blunt points. Leaves reliably turn a fiery orange-red in fall. Z4–9

O

OCHNA

OCHNACEAE

Genus of mainly deciduous or semi-evergreen trees and shrubs, grown mostly for their flowers and fruits. Frost tender. Prefers full light and well-drained soil. Water potted specimens moderately, less when not in growth. Prune, if necessary, in early spring. Propagate by seed in spring or by semiripe cuttings in summer.
O. multiflora. See *O. serrulata*.
O. serratifolia of gardens. See *O. serrulata*.
O. serrulata, syn. *O. multiflora*, *O. serratifolia* of gardens (Mickey-mouse plant). Evergreen, irregularly rounded, twiggy shrub that is semievergreen in low temperatures. H to 6ft (2m), S 3–6ft (1–2m) or more. Leaves are narrowly elliptic, toothed, and glossy. Produces 5-petaled, bright yellow flowers in spring-summer, then shuttlecock-shaped, red fruits, each with 1–5 berrylike seeds clustered on top. Z10–12 (min. 45°F/7°C).

x *Odontioda*. See *Oncidium* and x *Oncostele*
x *Odontocidium*. See *Oncidium*.
***Odontoglossum bictoniense*.** See *Rhynchostele bictoniense*.
***Odontoglossum* Buttercrisp gx.** See *Oncidium* Buttercrisp gx.
***Odontoglossum cervantesii*.** See *Rhynchostele cervantesii*.
***Odontoglossum cordatum*.** See *Rhynchostele cordata*.
***Odontoglossum crispum*.** See *Oncidium alexandrae*.
***Odontoglossum* Eric Young gx.** See *Oncidium* Eric Young gx.
***Odontoglossum grande*.** See *Rossioglossum grande*.
***Odontoglossum* Le Nez Point gx.** See *Oncidium* Le Nez Point gx.
***Odontoglossum rossii*.** See *Rhynchostele rossii*.
***Odontoglossum* Royal Occasion gx.** See *Oncidium* Royal Occasion gx.

OEMLERIA

SYN. NUTTALLIA, OSMARONIA

ROSACEAE

Genus of one species of deciduous, early spring-flowering shrub, grown for its fragrant flowers and decorative fruits. Separate male and female plants are needed in order to obtain fruits. Fully hardy. Prefers sun or partial shade and moist soil. To restrict growth, remove suckers and cut old shoots bacor down to base in late winter. Propagate by suckers in fall.
O. cerasiformis (Indian plum, Oregon plum, Oso berry). Deciduous, upright, then arching shrub that forms dense thickets. H 8ft (2.5m), S 12ft (4m). Leaves are narrowly ovate and dark blue-green. Produces nodding clusters of small, fragrant, bell-shaped, white flowers in early spring, followed by small, plum-shaped, purple fruits. Z6–10

OENOTHERA

Evening primrose

ONAGRACEAE

Genus of annuals, biennials, and perennials, grown for their profuse but short-lived, often fragrant, flowers borne in summer. Fully to half hardy. Needs full sun and well-drained, sandy soil. Propagate by seed or division in fall or spring, or by softwood cuttings in late spring.
O. acaulis. Tuft-forming perennial. H 6in (15cm), S 8in (20cm). Has oblong to ovate, deeply toothed or lobed leaves. Cup-shaped, white flowers, turning pink, open at sunset in summer. Z4–10
O. biennis (Evening primrose). Erect, hairy annual or biennial, usually grown as a biennial. H 3–5ft (1–1.5m), S to 2ft (60cm). Produces large rosettes of oblong to lance-shaped, shallowly toothed, slightly sticky, red-veined, mid-green leaves, and lance-shaped stem leaves. Bowl-shaped, fragrant flowers, to 2in (5cm) across, initially pale yellow, aging to dark golden yellow, and opening in the evening, are borne in leafy, spikelike racemes from summer to fall. Seeds are used to produce evening primrose oil. Z4–9
O. caespitosa. Clump-forming, stemless perennial. H 5in (12cm), S 8in (20cm). Has narrowly ovate, entire or toothed, mid-green leaves. Flowers, opening at sunset in summer, are fragrant, cup-shaped, and white, becoming pink with age. Suits a rock garden. Z4–10
***O. fruticosa* 'Fireworks'.** See *O.f.* 'Fyrverkeri'. **'Fyrverkeri'** (syn. *O.f.* 'Fireworks') illus. p.275.
O. lindheimeri. See *Gaura lindheimeri*.
O. macrocarpa, syn. *O. missouriensis*, illus. p.372.
O. missouriensis. See *O. macrocarpa*.
O. perennis, syn. *O. pumila*. Clump-forming perennial. H 6–4in (15–60cm), S 1ft (30cm). In summer, loose spikes of nodding buds open to fragrant, funnel-shaped, yellow flowers above spoon-shaped, mid-green leaves. Z4–8
O. pumila. See *O. perennis*.
O. speciosa (White evening primrose). Frequently short-lived, clump-forming perennial, with running rhizomes. H 1½ft (45cm), S 1ft (30cm) or more. In summer, produces spikes of fragrant, saucer-shaped, green-centered, white flowers that age to pink and open flat. Leaves are narrowly spoon-shaped, deeply cut, and mid-green. Z4–8

OLEA

OLEACEAE

Genus of evergreen trees, grown for their foliage and edible fruits. Frost hardy; in cold areas requires the protection of a sheltered, south- or west-facing wall. Requires full sun and deep, fertile, very well-drained soil. Propagate by semiripe cuttings in summer or by seed in fall.
O. europaea (Olive). Slow-growing, evergreen, spreading tree. H and S 30ft (10m). Very long-lived. Narrowly oblong leaves are gray-green above, silvery beneath. Short racemes of tiny, fragrant, white flowers, borne in late summer, are followed by edible, ovate, green, later purple fruits. Z8–10

OLEARIA

Daisy bush

ASTERACEAE/COMPOSITAE

Genus of evergreen shrubs, small trees, and some perennials, grown for their foliage and daisylike flower heads. In mild, coastal areas provides good, very wind-resistant shelter. Borderline frost hardy to frost tender. Needs full sun and well-drained soil. Cut out dead wood in spring. Propagate by semiripe cuttings in summer.
O. albida of gardens. See *O.* 'Talbot de Malahide'.
O. avicenniifolia. Evergreen, rounded, dense shrub. H 10ft (3m), S 15ft (5m). Ovate to lance-shaped, dark gray-green leaves are white beneath. Bears wide heads of fragrant, white flowers in late summer and early fall. Z7–10
O.* x *haastii (Daisy bush) illus. p.130.
O. 'Henry Travers', syn. *O. semidentata* of gardens. Evergreen, rounded, compact shrub. H and S 10ft (3m). Has white shoots and narrowly lance-shaped, leathery, gray-green leaves. Large heads of purple-centered, lilac flowers are borne from early to midsummer. Z9–11
O. ilicifolia (Mountain holly) illus. p.130.
O. lacunosa. Evergreen, upright, dense shrub. H and S 10ft (3m). Narrowly oblong, pointed, rigid leaves have rust-brown hairs when young and mature to glossy, dark green with central, white veins. Bears white flowerheads only rarely. Z9–11
O. macrodonta illus. p.132.
O.* x *mollis. Evergreen, rounded, dense shrub. H 3ft (1m), S 5ft (1.5m). Has ovate, wavy-edged, silvery-gray leaves. Large heads of small, white flowers are borne profusely in late spring. Z7–10.
'Zennorensis', H and S 6ft (2m), has narrowly oblong leaves.
O. nummulariifolia illus. p.128.
O. phlogopappa. Evergreen, upright, compact shrub. H and S 6ft (2m). Leaves are gray-green and oblong, with wavy edges. Bears abundant, white flower heads in late spring. Z7–10. **var. *subrepanda*** illus. p.149. **var. *subrepanda* 'Comber's Blue'** has flowers with mid-blue ray florets. **var. *subrepanda* 'Comber's Pink'** has flowers with pink ray florets.
O.* x *scilloniensis illus. p.131.
O. semidentata of gardens. See *O.* 'Henry Travers'.

***O.* 'Talbot de Malahide'**, syn. *O. albida* of gardens. Evergreen, bushy, dense shrub. H 10ft (3m), S 15ft (5m). Has ovate, dark green leaves, silvery beneath. Bears broad heads of fragrant, white flowers in late summer. Good for exposed, coastal gardens. Z9–11
O. virgata illus. p.112.

***Oliveranthus elegans*.** See *Echeveria harmsii*.

OLSYNIUM

IRIDACEAE

Genus of fibrous-rooted, clump-forming perennials, grown for their nodding, trumpet- to bell-shaped flowers in spring. Good for a shady rock garden, peat bed, or alpine house. Fully hardy. Requires partial shade and moist, humus-rich, moderately fertile soil. Propagate by seed in fall. Young plants take 2 or 3 years to flower.

O. biflorum, syn. *Phaiophleps biflora*, *Sisyrinchium odoratissimum*. Slender, clump-forming, rhizomatous perennial. H 10–14in (25–35cm), S 2–3in (5–8cm). Has upright stems with cylindrical, rushlike, erect, basal leaves. In late spring or summer, produces a small head of fragrant, pendent, trumpet-shaped, white flowers that are striped and veined red. H5
O. douglasii, syn. *Sisyrinchium douglasii*, *S. grandiflorum* (Grass widow, Spring bell). Stiff, upright, clump-forming, deciduous perennial. H 10in (25cm), S 6in (15cm). Has grasslike, linear, grayish-green leaves sheathing very short, threadlike, flowering stems. In early spring, produces a succession of pendent, bell-shaped, violet to red-purple, or sometimes white, flowers. Suits a rock garden or alpine house. H5

OMPHALODES

BORAGINACEAE

Genus of annuals, biennials, and perennials, some of which are evergreen or semievergreen. Provides good ground-cover, especially in rock gardens. Fully to frost hardy. Needs shade or partial shade and moist but well-drained soil, except for *O. linifolia* and *O. luciliae*, which enjoy sun. Propagate by seed or division in spring.
O. cappadocica illus. p.334.
'Cherry Ingram' illus. p.261.
O. linifolia (Venus's navelwort) illus. p.299.
O. luciliae. Semievergreen, mound-forming perennial. H 3in (7cm), S 6in (15cm). Has ovate, blue-gray leaves. In spring–summer, loose sprays of pink buds develop into flattish, sky-blue flowers. Resents winter wet; plant in a sheltered site or alpine house. Prefers full sun and very gritty soil. Z6–9
O. verna illus. p.334.

OMPHALOGRAMMA

PRIMULACEAE

Genus of perennials, closely related to *Primula*, grown for their flowers. Good rock garden plants, but are difficult to grow, especially in hot, dry areas. Fully hardy. Needs shade and gritty, moist but well-drained, peaty soil. Propagate by seed in spring.
O. vinciflorum. Basal-rosetted perennial. H 6in (15cm), S 4in (10cm). Has ovate to oblong, hairy leaves that are mid-green. In spring, produces nodding, funnel-shaped, violet flowers, each with a deeper violet throat and a flat, flared mouth. Z6–9

ONCIDIUM

ORCHIDACEAE

See also ORCHIDS.
O. alexandrae, syn. *Odontoglossum crispum* (illus. p.466). Evergreen, epiphytic orchid for a cool greenhouse or conservatory. H 6in (15cm). Bears long sprays of rounded flowers, 3in (8cm) across, white or spotted or flushed with pink, each with a red-and-yellow-marked lip; flowering season varies. Has narrowly

ovate leaves, 10–15cm (4–6in) long. Requires shade in summer. Z11–12 (min. 50°F/10°C; max. 75°F/24°C)

***O.* Artur Elle gx 'Colombian'**, syn. x *Odontocidium* Artur Elle 'Colombian' (illus. p.467). Evergreen, epiphytic orchid for a cool greenhouse. H 9in (23cm). Produces tall spikes of pale yellow flowers, 2½in (6cm) across and intricately patterned with brown; flowering season varies. Has narrowly ovate leaves, 4–6in (10–15cm) long. Requires shade in summer. Z11–12 (min. 50°F/10°C; max. 75°F/24°C)

***O.* Eric Young gx**, syn. *Odontoglossum* Eric Young (illus. p.467). Evergreen, epiphytic orchid for a cool greenhouse. H 6in (15cm). Bears spikes of white-lipped, pale yellow flowers, 3in (8cm), spotted with rich yellow; flowering season varies. Has narrowly ovate leaves, 4–6in (10–15cm) long. Provide cool shade in summer. Z11–12 (min. 50°F/10°C; max. 75°F/24°C)

O. flexuosum. See *Gomesa flexuosa*.

***O.* Hambühren Stern gx 'Cheam'**, syn. x *Wilsonara* Hambühren Stern gx 'Cheam' (illus. p.467). Evergreen, epiphytic orchid for a cool greenhouse. H 9in (23cm). Narrowly ovate leaves are 4in (10cm) long. Bears spikes of deep reddish-brown flowers, 3½in (9cm) across, each with a yellow lip; flowering season varies. Needs shade in summer. Z11–12 (min. 50°F/10°C; max. 75°F/24°C)

***O.* Buttercrisp gx**, syn. x *Odontoglossum* Buttercrisp (illus. p.467). Evergreen, epiphytic orchid for a cool greenhouse. H 9in (23cm). Bears arching spikes of intricately patterned, red, tan, orange, and yellow flowers, 3in (8cm) across; flowering season varies. Has narrowly ovate leaves, 4–6in (10–15cm) long. Needs shade in summer. Z11–12 (min. 50°F/10°C; max. 75°F/24°C)

***O.* Le Nez Point gx**, syn. *Odontoglossum* Le Nez Point. Evergreen, epiphytic orchid for a cool greenhouse. H 6in (15cm). Crimson flowers, 2½in (6cm) across, are borne in spikes; flowering season varies. Has narrowly ovate leaves, 4–6in (10–15cm) long. Needs shade in summer. Z11–12 (min. 50°F/10°C; max. 75°F/24°C)

***O.* Memoria Commander Wiggs gx 'Kay'** (illus. p.467). Evergreen, epiphytic orchid for a cool greenhouse. H 9in (23cm). Bears spikes of mottled, deep reddish-brown flowers, 2in (5cm) across, each with a rich golden-yellow lip; flowering season varies. Narrowly ovate leaves are 4–6in (10–15cm) long. Grow in shade in summer. Z11–12 (min. 50°F/10°C; max. 75°F/24°C)

***O.* Mount Bingham**, syn. x *Odontioda* Mount Bingham. Evergreen, epiphytic orchid for a cool greenhouse. H 9in (23cm). Bears pink-edged, red flowers, 3½in (9cm) across, in spikes; flowering season varies. Has narrowly ovate leaves, 4–6in (10–15cm) long. Needs shade in summer. Z11–12 (min. 50°F/10°C; max. 75°F/24°C)

O. ornithorrhynchum of gardens. See *O. sotoanum*.

O. papilio. See *Psychopsis papilio*.

***O.* Petit Port**, syn. x *Odontioda* Petit Port. Evergreen, epiphytic orchid for a cool greenhouse. H 9in (23cm). Bears spikes of rich red flowers, 3in (8cm) across, each with a pink-and-yellow-marked lip; flowering season varies. Narrowly ovate leaves are 4–6in (10–15cm) long. Needs shade in summer. Z11–12 (min. 50°F/10°C; max. 75°F/24°C)

***O.* Royal Occasion**, syn. *Odontoglossum* Royal Occasion. Evergreen, epiphytic orchid for a cool greenhouse. H 6in (15cm). Bears spikes of white flowers, 3in (8cm) across, with deep yellow markings in the centers of the lips in fall-winter. Leaves are narrowly ovate and 4–6in (10–15cm) long. Shade in summer. Z11–12 (min. 50°F/10°C; max. 75°F/24°C)

O. sotoanum (illus. p.466). This plant has been widely grown under the alternative name of *O. ornithorrhynchum* of gardens. Evergreen, epiphytic orchid for a cool greenhouse. H 6in (15cm). Dense, arching sprays of very fragrant, rose-lilac flowers, ¼in (5mm) across, with a yellow highlight, are borne freely in fall. Has narrowly ovate leaves, 4in (10cm) long. Needs partial shade in summer. Z11–12 (min. 55°F/13°C; max. 86°F/30°C)

***O.* Tiger Hambühren**, syn. x *Odontocidium* Tiger Hambühren. Evergreen, epiphytic orchid for a cool greenhouse. H 9in (23cm). Tall spikes of deep yellow flowers, 3in (8cm) across, are patterned with chestnut-brown; flowering season varies. Has narrowly ovate leaves, 4–6in (10–15cm) long. Shade in summer. Z11–12 (min. 50°F/10°C; max. 75°F/24°C)

***O.* Tigersun gx 'Orbec'**, syn. x *Odontocidium* Tigersun 'Orbec' (illus. p.467). Evergreen, epiphytic orchid for a cool greenhouse. H 9in (23cm). Similar to x *O.* Tiger Hambuhren, but flowers are slightly smaller, with lighter patterning. Z11–12 (min. 50°F/10°C; max. 75°F/24°C)

O. tigrinum (illus. p.467). Evergreen, epiphytic orchid for a cool or intermediate greenhouse. H 9in (23cm). Branching spikes of fragrant, yellow-marked, brown flowers, 2in (5cm) across, each with a large, yellow lip, are produced in fall. Has ovate leaves, 6in (15cm) long. Requires partial shade in summer. Z11–12 (min. 55°F/13°C; max. 86°F/30°C)

x ONCIDOPSIS

ORCHIDACEAE

See also ORCHIDS.

x *O.* Olga gx. Evergreen, epiphytic orchid for a cool greenhouse. H 6in (15cm). Pure white flowers, 4in (10cm) across, with large, reddish-brown-blotched lips, are borne in tall, arching racemes, mainly in fall. Produces ovoid pseudobulbs and narrowly ovate leaves, 5in (12cm) long. Best grown in shade during the summer. Z11–12 (min. 50°F/10°C; max. 75°F/24°C)

x ONCOSTELE

ORCHIDACEAE

See also ORCHIDS.

x *O.* Cambria gx 'Lensing's Favorite', syn. x *Vuylstekeara* Cambria gx 'Lensing's Favorite' (illus. p.467). Evergreen, epiphytic orchid for a cool greenhouse. H 9in (23cm). Has narrowly ovate leaves, 4–6in (10–15cm) long. Bears long sprays of wine-red flowers, 4in (10cm) across, heavily marked with white; flowering season varies. Needs shade in summer. Z11–12 (min. 50°F/10°C; max. 75°F/24°C)

x *O.* Pacific Mystery gx, syn. x *Odontioda* Pacific Gold, x *Odontoglossum cordatum*. Evergreen, epiphytic orchid for a cool greenhouse. H 9in (23cm). Bears long spikes of yellow-striped and -marked, rich chocolate-brown flowers, 3in (7cm) across; flowering season varies. Leaves are narrowly ovate and 4–6in (10–15cm) long. Grow in shade in summer. Z11–12 (min. 50°F/10°C; max. 75°F/24°C)

Oncostema peruviana. See *Scilla peruviana*.

ONOCLEA

ONOCLEACEAE

Genus of one species of deciduous fern that rapidly colonizes wet areas via spreading, underground rhizomes. Fully hardy. Grows in light dappled shade and in wet soil. Remove fronds as they fade. Sow spores at 59–61°F (15–16°C) as soon as ripe, or divide in spring.

O. sensibilis (Sensitive fern). Deciduous, creeping fern. H and S 1½ft (45cm). Produces handsome, arching, almost triangular, divided, fresh pale green fronds, often suffused pinkish-brown in spring. In fall, fronds turn an attractive yellowish-brown. Z4–8

ONONIS

PAPILIONACEAE/LEGUMINOSAE

Genus of summer-flowering annuals, perennials, and deciduous or semievergreen shrubs and subshrubs, grown for their pealike flowers. Good for walls, rock gardens, and banks. Fully hardy. Needs sun and well-drained soil. Propagate by seed in fall or spring, shrubs by softwood cuttings in summer.

O. fruticosa (Shrubby restharrow) illus. p.339.

O. natrix (Large yellow restharrow) illus. p.345.

O. rotundifolia. Deciduous or semievergreen, glandular, upright subshrub. H 8–24in (20–60cm), S 8–12in (20–30cm) or more. Small, rounded, hairy, 3-parted, toothed, green leaves, have a long-stalked terminal leaflet. Bears clusters of relatively large, rose-pink, red-streaked flowers in summer. Z6–9

Onopordon. See *Onopordum*.

ONOPORDUM

SYN. ONOPORDON

ASTERACEAE/COMPOSITAE

Genus of annuals, biennials, and perennials, ranging from stemless to tall, branching plants. Grown for their typically thistlelike flower heads. Fully hardy. Grow in sun or partial shade, in rich, well-drained soil. Remove dead flower heads to prevent self-seeding. Propagate by seed in fall or spring. Prone to slug and snail damage.

O. acanthium (Cotton thistle, Scotch thistle) illus. p.305.

ONOSMA

BORAGINACEAE

Genus of biennials and often woody-based perennials, grown for their long, pendent, tubular flowers. Suitable for rock gardens. Fully to frost hardy. Needs full sun and well-drained soil. Dislikes wet summers. Propagate by softwood cuttings in summer or by seed in fall.

O. alborosea illus. p.338.

O. stellulata. Semievergreen, upright subshrub. H and S 6in (15cm). Leaves are oblong and covered in hairs which may irritate the skin. Clusters of yellow flowers open in late spring and summer. Z5–8

OOPHYTUM

AIZOACEAE

Genus of clump-forming, egg-shaped, perennial succulents with 2 united, very fleshy leaves. These are covered in dry, papery sheaths, except in spring when sheaths split open, revealing a new pair of leaves. Flowers are produced from a slight central fissure on upper surface. Difficult to grow. Frost tender. Requires sun and well-drained soil. Propagate by seed, or separate and root complete bodies, in spring or summer.

O. nanum. Clump-forming, perennial succulent. H ¾in (2cm), S ½in (1cm). Has 2 united, fleshy, green leaves, and bears daisylike, white flowers, ½in (1cm) across, in fall. Z10–12 (min. 45°F/7°C)

Operculina tuberosa. See *Merremia tuberosa*.

OPHIOPOGON

ASPARAGACEAE

Genus of evergreen perennials, grown for their grasslike foliage. Fully to half hardy. Grows in sun or partial shade, in fertile, well-drained, preferably acidic soil. Propagate by division in spring or by seed in fall.

O. jaburan. Evergreen, clump-forming perennial. H 6in (15cm), S 1ft (30cm). Has dark green foliage. In early summer, bears racemes of bell-shaped, white flowers, followed by deep blue berries. Z9–11.

'Variegatus' see *O.j.* 'Vittatus'.

'Vittatus' (syn. *O.j.* 'Variegatus') has white- or yellow-striped foliage and is much less robust.

O. japonicus illus. p.283. **'Minor'**, H and S 4–5in (10–12cm), is a compact, evergreen, grasslike perennial. Has narrow, deep green leaves. Spikes of small, bell-shaped, white, occasionally pale lilac, flowers are produced in summer, followed by fleshy, blue berries. Slow growing.

***O. planiscapus* 'Nigrescens'** illus. p.280.

OPHRYS

ORCHIDACEAE

See also ORCHIDS.

O. aranifera. See *O. sphegodes*.

O. fuciflora, syn. *O. holoserica* of gardens (Late spider orchid). Deciduous, terrestrial orchid. H 6–22in (15–55cm). Spikes of flowers, ½in (1cm) long, from white through pinto blue and green, are borne in spring–summer. Leaves are ovate to oblong, 2–4in (5–10cm) long. Grow in shade outdoors. Containerized plants require partial shade in summer. Z8–10

O. fusca. Deciduous, terrestrial orchid. H 4–16in (10–40cm). Spikes of greenish, yellow or brown flowers, ¼in (5cm) long,

each with a yellow-edged, bluish, brown or purple lip, are produced in spring. Has ovate or lance-shaped leaves, 3–5in (8–12cm) long. Cultivate as for *O. fuciflora* of gardens. Z8–10

O. holoserica of gardens. See *O. fuciflora*.

O. lutea (illus. p.467). Deciduous, terrestrial orchid. H 3–12in (8–30cm). In spring, bears short spikes of flowers, ½in (1cm) long, with greenish sepals, yellow petals, and brown-centered, bright yellow lips. Has ovate, basal leaves, 2–4in (5–10cm) long. Cultivate as for *O. fuciflora*. Z8–10

O. speculum, syn. *O. vernixia* (Mirror orchid). Deciduous, terrestrial orchid. H 3–12in (8–30cm). In spring, bears dense spikes of flowers, ½in (1cm) long, with greenish or yellow sepals, purple petals, and 3-centered, brown lips. Has oblong to lance-shaped leaves, 1½–3in (4–7cm) long. Cultivate as for *O. fuciflora*. Z8–10

O. sphegodes, syn. *O. aranifera* (Early spider orchid). Deciduous, terrestrial orchid. H 4–18in (10–45cm). In spring-summer, bears spikes of flowers, ½in (1cm) long, that vary from green to yellow and have spiderlike, blackish-brown marks on lips. Leaves are ovate to lance-shaped and 1½–3in (4–8cm) long. Cultivate as for *O. fuciflora*. Z8–10

O. tenthredinifera (Sawfly orchid; illus. p.466). Deciduous, terrestrial orchid. H 6–22in (15–55cm). In spring, bears spikes of flowers, ½in (1cm) long, in colors of white to pink, or blue and green, each with a violet or bluish lip edged with pale green. Has a basal rosette of ovate to oblong leaves, 2–3½in (5–9cm) long. Cultivate as for *O. fuciflora*. Z9–11

O. vernixia. See *O. speculum*.

Ophthalmophyllum.
See *Conophytum*.

OPLISMENUS

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.

O. africanus. See *O. hirtellus*.

'Variegatus' see *O.h.* 'Variegatus'.

O. hirtellus, syn. *O. africanus*. Evergreen perennial. H 6in (15cm), but may form mounds to 3ft (90cm), S indefinite. Has wiry stems, spreading and rooting at the nodes, bearing narrowly lance-shaped to ovate, softly hairy, mid-green leaves, with long points. Small flowers are produced in one-sided racemes, to 6in (15cm) long, from summer to winter. Z10–11 (min. 41°F/5°C). **'Variegatus'** (syn. *O. africanus* 'Variegatus') illus. p.469.

OPUNTIA

Prickly pear

CACTACEAE

Genus of perennial cacti, ranging from small, alpine, groundcover plants to large, evergreen, tropical trees, with at times insignificant glochids—short, soft, barbed spines produced on areoles. Mature plants produce abundant, short-spined, pear-shaped, green, yellow, red, or purple fruits (prickly pears), edible in some species. Borderline fully hardy to frost tender. Hardy species must be kept dry in winter in order to survive low temperatures. Needs sun and well-drained soil. Water containerized specimens when in full growth. Propagate by seed or root stem segments in spring or summer. Some species can become invasive. Contact with the bristles causes intense skin irritation and they are difficult to remove.

O. brasiliensis. See *Brasiliopuntia brasiliensis*.

O. erinacea* var. *ursina. See *O. polyacantha* var. *erinacea*.

O. ficus-indica (Indian fig). Bushy to treelike, perennial cactus. H and S 15ft (5m). Has flattened, oblong, blue-green stem segments, 20in (50cm) long, and spineless. In spring–summer, produces shallowly saucer-shaped, yellow flowers, 4in (10cm) across, followed by edible, purple fruits. Z10–11 (min. 37–41°F/3–5°C)

O. humifusa illus. p.494.

O. microdasys (Bunny ears). Bushy, perennial cactus. H and S 60cm (2ft). Has flattened, ovate, green stem segments, 3–7in (8–18cm) long, that develop brown marks in low temperatures. Produces spineless areoles, with white, yellow, brown, or red glochids, closely set in diagonal rows. Abundant, funnel-shaped, yellow flowers, 2in (5cm) across, are borne in summer on plants over 6in (15cm) tall, followed by small, dark red fruits. Z10–11 (min. 37–41°F/3–5°C). **var. *albispina*** illus. p.483.

O. polycantha* var. *erinacea, syn. *O. erinacea* var. *ursina*, illus. p.481.

O. robusta illus. p.488.

O. tunicata. See *Cylindropuntia tunicata*.

ORBEA

ASCLEPIADACEAE/APOCYNACEAE

Genus of clump-forming, perennial succulents with erect, 4-angled stems. Stem edges are often indented and may produce small leaves that drop after only a few weeks. Frost tender. Needs sun or partial shade and well-drained soil. Propagate by seed or stem cuttings in spring or summer.

O. variegata, syn. *Stapelia variegata* (Star flower, Toad cactus), illus. p.488.

ORCHIDS

ORCHIDACEAE

Family of perennials, some of which are evergreen or semievergreen, grown for their beautiful, unusual flowers. These consist of 3 outer sepals and 3 inner petals, the lowest of which, known as the lip, is usually enlarged and different from the others in shape, markings, and color. There are about 750 genera and 22,500 species, together with an even greater number of hybrids, bred partly for their vigor and ease of care. They are divided into epiphytic and terrestrial plants. (The spread of an orchid is indefinite.)

Epiphytic orchids

Epiphytes have more flamboyant flowers than terrestrial orchids and are more commonly grown. In the wild, they grow on tree branches or rocks (lithophytes), obtaining nourishment through clinging roots and moisture through aerial roots. Most consist of a horizontal rhizome, from which arise vertical, water-storing, often swollen stems known as pseudobulbs. Flowers and foliage are produced from the newest pseudobulbs. Other epiphytes consist of a continuously growing upright rhizome; on these, flower spikes are produced in the axils of leaves growing from the rhizome. In temperate climates, epiphytes need to be grown under glass.

Cultivation of epiphytes

For cultivation purposes, epiphytes, which are all frost tender, may be divided into 3 groups: cool-greenhouse types, which require min. 50°F (10°C) and max. 75°F (24°C); intermediate-greenhouse types, needing 55–80°F (13–27°C); and warm-greenhouse types, requiring 65–80°F (18–27°C). Summer temperatures need to be controlled by ventilation and shading the glass. Cool-greenhouse orchids may be placed outdoors in summer; this improves flowering. Other types may also be grown outdoors if the air temperature remains within these ranges.

The amount of light required in summer is given in individual plant entries. All epiphytic orchids, however, need to be kept out of direct sun in summer to avoid scorching, and require full light in winter.

Epiphytic orchids, whether grown indoors or outside, need a special soil-free compost obtained from an orchid nursery or made by mixing 2 parts fibrous material (such as barchippings and/or peat) with 1 part porous material (such as moss and/or expanded clay pellets). Most epiphytes may be grown in pots, but some may be successfully cultivated in a hanging basket or on a slab of bark (with moss around their roots) suspended in the greenhouse.

In summer, water plants freely and spray regularly. Those suspended on bark slabs need a constantly moist atmosphere. In winter, water moderately; if plants are in growth, spray occasionally. Some orchids rest in winter, when they need scarcely any water or none at all. Orchids benefit from weak foliar feeds; apply as for watering. Repot every other year, in spring; if plants are about to flower, repot after flowering.

Terrestrial orchids

Terrestrial orchids, some of which also produce pseudobulbs, grow in soil or leaf mold, sustaining themselves in the normal way through roots or tubers. Some may be grown in borders, but many in temperate climates need to be grown in pots and protected under glass in winter.

Cultivation of terrestrial orchids

Terrestrial orchids are fully hardy to frost tender. *Cypripedium* species may be grown outdoors in any area, preferably in neutral to acidic soil, but cannot withstand severe frost, if frozen solid in pots or without snow cover, or tolerate very wet soil in winter. Other terrestrial orchids, except in very mild areas, are best grown in pots; use the same compost as for epiphytes but add 1 part grit to 2 parts compost. Place pots outdoors in a peat bed or in a glasshouse in the growing season. Keep dry when dormant. Under glass, light requirements, watering, feeding, and repotting are as for epiphytes.

Orchid propagation

Any orchids with pseudobulbs (for example, *Cattleya, Cymbidium, Dendrobium* and *Oncidium*), may be increased by removing and replanting old, leafless pseudobulbs when repotting in spring. Take care to retain at least 4 pseudobulbs on the parent plant. Some orchids without pseudobulbs produce new growth from the base. When a plant has 6 new growths, divide it in spring into 2 and repot both portions. Propagate *Disa, Paphiopedilum* and *Phragmipedium* in this way. Large specimens of *Eria* and *Masdevallia* may be divided in spring, leaving 4–6 stems on each portion.

Propagation of *Phalaenopsis* is by stem cuttings taken soon after flowering. *Vanda* may be increased by removing the top half of the stem once it has produced aerial roots and leaves; new growths will develop from the leafless base. Achieving success with these methods is difficult and not recommended for the beginner.

Propagate terrestrial orchids with tubers by division of the tubers. Genera that may be increased in this way are: *Cypripedium* (in spring), *Dactylorhiza* (spring), *Ophrys* (fall), *Serapias* (fall), and *Spiranthes* (spring). *Angraecum* should not be propagated in cultivation, because the parent plant is easily endangered.

Orchids are illustrated on pp.466–47. See also x *Aliceara, Angraecum, Anguloa, Bletilla, Brassavola, Bulbophyllum, Calanthe, Calypso, Cattleya,* x *Cattlianthe, Coelogyne, Cymbidium, Cypripedium, Dactylorhiza, Dendrobium, Dendrochilum, Epidendrum, Eria, Gomesa, Guarianthe, Laelia, Lycaste, Masdevallia, Maxillaria, Miltonia, Miltoniopsis, Oncidium,* x *Oncidopsis, Ophrys, Paphiopedilum, Phaius, Phalaenopsis, Phragmipedium, Pleione, Psychopsis,* x *Rhyncattleanthe, Rossioglossum, Serapias, Spiranthes, Stanhopea, Vanda* and *Zygopetalum.*

Orchis elata. See *Dactylorhiza elata*.

Orchis maderensis. See *Dactylorhiza foliosa*.

Orchis morio. See *Anacamptis morio*.

OREOCEREUS

CACTACEAE

Genus of mainly columnar, perennial cacti with thick, cylindrical, much-ribbed stems, usually branching from the base, with spines and, in some species, covered in long hairs. Solitary, tubular-funnel-shaped flowers are produced near the stem tips during the day in summer. Frost tender. Requires full sun and very well-drained, slightly alkaline soil. Water well during spring and summer, much less so during fall and winter. Propagate by seed in spring or summer.

O. aurantiacus. See *Matucana aurantiaca*.

O. celsianus, syn. *Cleistocactus celsianus* (Old man of the Andes), illus. p.493.

O. trollii, syn. *Cleistocactus trollii* (Old man of the Andes). Slow-growing, columnar, perennial cactus. H 28in (70cm), S 4in (10cm). Cylindrical, green stem, 3–4in (7–10cm) wide, with thick, golden spines is almost hidden by long, wispy, hairlike, white spines. Bears pink flowers, recurved

at tips and 4in (10cm) long, in summer on fully mature plants. Z10–11 (min. 41°F/5°C)

ORIGANUM

Marjoram, Oregano

LAMIACEAE/LABIATAE

Genus of deciduous and evergreen subshrubs and herbaceous perennials, sometimes with overwintering leaf rosettes. Some species are grown as culinary herbs, others for their clusters of tubular, usually pink flowers. Most species have arching, prostrate stems and are useful for trailing over rocks, banks, and walls. Fully to frost hardy. Prefers sun and well-drained, alkaline soil. Propagate by division in spring, by cuttings of non-flowering shoots in early summer, or by seed in fall or spring.

O. amanum. Deciduous, rounded, compact subshrub. H and S 6–8in (15–20cm). Open funnel-shaped, pale pink or white flowers are borne all summer above small, heart-shaped, pale green leaves. A good alpine house plant; dislikes a damp atmosphere. Z5–9

O. dictamnus (Cretan dittany). Prostrate perennial. H 5–6in (12–15cm), S 40cm (16in). Arching stems are clothed in rounded, aromatic, hairy, gray-white leaves. Produces pendent heads of open funnel-shaped, purplish-pink flowers in summer. Z9–11

***O.* 'Kent Beauty'** illus. p.339.

O. laevigatum illus. p.340.

O. rotundifolium. Deciduous, prostrate subshrub. H 9–12in (23–30cm), S 1ft (30cm). Throughout summer bears whorls of pendent, funnel-shaped, pale pink flowers, surrounded by yellow-green bracts. Has small, rounded, mid-green leaves. Z5–9

O. vulgare (Wild marjoram). Mat-forming, woody-based perennial. H and S 1½ft (45cm). Has ovate, aromatic, dark green leaves, above which branched, wiry stems bear clusters of tiny, 2-lipped, tubular, mauve flowers in summer. Z4–10. **'Aureum'** illus. p.274.

'Compactum', H to 6in (15cm), S to 1ft (30cm), is dense, compact, and dome-forming, with smaller leaves, to ¾in (2cm) long.

ORNITHOGALUM

Star-of-Bethlehem

HYACINTHACEAE/LILIACEAE

Genus of bulbs, grown for their mostly star-shaped, white flowers, usually backed with green. Fully hardy to frost tender. Needs sun or partial shade and well-drained soil. Smaller species are suitable for a rock garden; taller ones for a herbaceous border. Lift and dry tender species for winter, if grown outside in summer, and replant in spring. Propagate by seed or offsets, in fall for spring-flowering plants, in spring for summer-flowering ones. ⓣ Handle carefuly as all parts may cause severe discomfort if ingested; the sap may irritate skin.

O. arabicum illus. p.409.

O. balansae, syn. *O. oligophyllum* of gardens, illus. p.414.

O. lanceolatum illus. p.415.

O. magnum illus. p.382.

O. montanum illus. p.415.

O. narbonense illus. p.408.

O. nutans illus. p.399.

O. oligophyllum of gardens. See *O. balansae*.

O. saundersiae. Summer-flowering bulb. H to 3ft (1m), S 6–8in (15–20cm). Produces a basal cluster of strap- or lance-shaped, semierect, dark green, sometimes grayish-green leaves. Stem bears a flat-topped head of erect, cup-shaped, white or cream flowers, each with a blackish-green ovary forming a dark eye. Z10–11

O. thyrsoides (Chincherinchee) illus. p.408.

O. umbellatum illus. p.416.

Orobus vernus. See *Lathyrus vernus*.

ORONTIUM

Golden club

ARACEAE

Genus of one species of deciduous, perennial, deep-water plant, grown for its floating foliage and flower spikes. Fully hardy. Needs full sun. Remove faded flower spikes. Propagate by sowing seed, as soon as ripe, in midsummer. Divide rhizomes in spring.

O. aquaticum (Golden club) illus. p.444.

OROSTACHYS

CRASSULACEAE

Genus of short-lived, basal-rosetted, perennial succulents with very fleshy, sword-shaped leaves. Produces flowers 3 years from sowing seed, then dies. Fully hardy to frost tender. Requires sun and well-drained soil. Propagate by seed or division in spring or summer.

O. spinosus. Clump-forming, perennial succulent. H to 8in (20cm), S 4in (10cm). Produces compact rosettes of narrowly oblong, spine-tipped, gray-green leaves, to 1¼in (3cm) long. Dense, cylindrical racemes, to 8in (20cm) long, of star-shaped, yellow to white flowers, ½–¾in (1–2cm) across, with protruding yellow stamens, are borne in summer. Z6–9

OROYA

CACTACEAE

Genus of spherical, perennial cacti with flowers borne in summer. Inner flower petals form a tube and outer ones open fully. Frost tender. Needs a sunny, well-drained site. Propagate by seed in spring or summer.

O. neoperuviana. See *O. peruviana*.

O. peruviana, syn. *O. neoperuviana*, illus. p.486.

Orphanidesia. See *Epigaea*.

ORTHROSANTHUS

IRIDACEAE

Genus of perennials with short, woody rhizomes, grown for their blue flowers, borne on slender, erect stalks. Flowers are short-lived, but open in succession for 2 weeks or more from late spring to summer. Frost hardy to frost tender. Prefers sun and well-drained soil. Propagate by division or seed in spring.

O. chimboracensis. Tufted, rhizomatous perennial. H 2ft (60cm) in flower, S 6in (15cm). Has very narrow, grasslike, ribbed, stiff leaves, to 1½ft (45cm) long, with finely toothed margins. In summer, bears clusters of short-lived, long-stalked, shallowly bowl-shaped, lavender-blue flowers, each enclosed in 2 leaflike bracts. Z9–11

ORYCHOPHRAGMUS

BRASSICACEAE/CRUCIFERAE

Genus of late spring- to summer-flowering annuals, grown for their cross-shaped flowers with 4-clawed, violet petals. Half hardy. Grow in sun and in fertile, well-drained soil. Propagate by seed in spring.

O. violaceus. Moderately fast-growing, upright annual or biennial. H 1–2ft (30–60cm), S 1ft (30cm). Has branching stems with thin, finely divided, pale green, basal leaves and smaller, pointed-ovate, pale green, stem-clasping leaves. Bears heads of 4-petaled, purple-blue flowers in late spring and early summer. Z10–11

OSBECKIA

MELASTOMATACEAE

Genus of evergreen, summer-flowering perennials, subshrubs and shrubs, grown for their flowers and foliage. Frost tender. Needs full light or partial shade and humus-rich, well-drained soil. Water potted plants freely when in full growth, moderately at other times. Cut back flowered stems by at least half in early spring to maintain vigor and to produce large flower trusses. Propagate by seed in spring or by greenwood cuttings in summer.

O. stellata. Evergreen, rounded, stiff-stemmed shrub. H and S 3–6ft (1–2m). Has narrowly ovate, hairy, prominently veined leaves. Produces terminal clusters of 4-petaled, rose-purple flowers in late summer. Z11–12 (min. 55°F/13°C)

OSCULARIA

AIZOCEACE

Genus of spreading, sometimes erect, subshrubby perennial succulents with daisylike, white to pink flowers, and usually angular, fleshy, grayish-green leaves. Frost hardy to frost tender. Use for summer bedding or as potted plants. With age becomes woody. Requires full sun and very well-drained soil. Propagate by seed or stem cuttings in spring or fall.

O. deltoides, syn. *Lampranthus deltoides*, illus. p.485.

OSMANTHUS

OLEACEAE

Genus of evergreen shrubs and trees, grown for their foliage and small, usually fragrant flowers. *O.* x *burkwoodii*, *O. delavayi*, and *O. heterophyllus* may be used for hedging. Fully hardy to frost tender. Tolerates sun or shade and fertile, well-drained soil. Restrict growth by cutting back after flowering; trim hedges in midsummer. Propagate by semiripe cuttings in summer.

O. armatus. Evergreen, bushy, dense shrub. H and S 12ft (4m). Large, oblong, dark green leaves are rigid and sharply toothed. Produces tubular, 4-lobed, white flowers in fall, followed by egg-shaped, dark violet fruits. Z8–10

O.* x *burkwoodii, syn. x *Osmarea burkwoodii*, illus. p.110.

O. decorus, syn. *Phillyrea decora*. Evergreen, upright, rounded, dense shrub. H 10ft (3m), S 15ft (5m). Has large, oblong, glossy, dark green leaves. Bears tubular, 4-lobed, white flowers in mid-spring, then egg-shaped, blackish-purple fruits. Z6–8

O. delavayi, syn. *Siphonosmanthus delavayi*, illus. p.110.

O. forrestii. See *O. yunnanensis*.

O. fragrans (Fragrant olive). Evergreen, upright shrub or tree. H and S 20ft (6m). Very fragrant, tubular, 4-lobed, white flowers are borne amid oblong, glossy, dark green leaves early to late summer, followed by ovoid, blue-black fruits. Suitable only for very mild areas. Z9–11.

f. *aurantiacus* has orange flowers.

O. heterophyllus. Evergreen dense, mounded shrub. H and S 15ft (5m). Has hollylike, sharply toothed, glossy, dark green leaves, often spineless on mature plants. Produces small clusters of fragrant, tubular, 4-lobed, white flowers from late summer to fall, followed by ovoid, blue-black fruit. Z7–9.

'Argenteomarginatus' see. *O.h.* 'Variegatus'. **'Aureomarginatus'** illus. p.119. **'Goshiki'**, H and S 6ft (2m), has pinkish bronze leaves when young, changing to creamy yellow marbled with gray-green, finally turning dark green flecked with cream and gray. **'Gulftide'**, H 8ft (2.5m), S 10ft (3m), is compact, with very spiny leaves. **'Variegatus'** (syn. *O.h.* 'Argenteomarginatus'), H and S 8ft (2.5m), is compact, with gray-green leaves, margined creamy white.

O. yunnanensis, syn. *O. forrestii*. Evergreen, treelike, upright, then spreading shrub. H and S 30ft (10m). Has large, oblong, glossy, bright green leaves, bronze when young. Produces tubular, 4-lobed, creamy-white flowers in clusters in late winter or early spring. Z8–10

x ***Osmarea burkwoodii.*** See *Osmanthus* x *burkwoodii*.

Osmaronia. See *Oemleria*.

OSMUNDA

OSMUNDACEAE

Genus of deciduous ferns. Fully hardy to frost hardy. Requires shade, except for *O. regalis*, which also tolerates sun. *O. cinnamomea* and *O. claytoniana* need moist soil; *O. regalis* does best in very wet conditions. Remove fading fronds regularly. Propagate by division in fall or winter, or by spores as soon as ripe.

O. cinnamomea (Cinnamon fern). Deciduous fern. H 3ft (1m), S 1½ft (45cm). Outer, lance-shaped, divided, pale green sterile fronds, with deeply cut pinnae, surround brown fertile fronds, all arising from a fibrous rootstock. Z3–9

O. claytoniana (Interrupted fern). Deciduous fern. H 2ft (60cm), S 1ft (30cm). Has lance-shaped, pale green fronds, divided into oblong, blunt pinnae; outer sterile fronds are larger than fertile ones at center of plant. Z3–9

O. regalis (Royal fern) illus. p.443.

OSTEOMELES

ROSACEAE

Genus of deciduous, semievergreen or evergreen, summer-flowering shrubs, grown for their habit, foliage, and flowers. Frost hardy. In most areas plant against a sunny south- or west-facing wall in fertile, well-drained soil. Propagate by semiripe cuttings in summer.

O. schweriniae illus. p.129.

OSTEOSPERMUM

ASTERACEAE/COMPOSITAE

Genus of evergreen subshrubs, perennials, and annuals, grown for their small, daisylike, usually white, pink, or yellow flower heads, sometimes with disk florets in a contrasting color. Borderline fully hardy to frost tender; does best in warm areas. Half hardy perennials and subshrubs are best grown as annuals. Needs sun and well-drained soil. Propagate by cuttings of non-flowering shoots in midsummer.

O. barberae of gardens. See *O. jucundum*.

***O.* 'Blue Streak'**, syn. *O. ecklonis* 'Blue Streak'. Evergreen, upright perennial. H and S 1½ft (45cm). From summer to fall, daisylike flower heads, with dark slate-blue centers and white ray florets, blue on the reverse, are borne above lance-shaped, gray-green leaves. Z9–11

***O.* 'Buttermilk'** illus. p.319.

***O.* 'Cannington Roy'.** Evergreen, densely spreading subshrub. H 1ft (30cm), S 1½ft (45cm). Bears a profusion of large, daisylike, pink flower heads, with darker eyes, from summer to fall. Leaves are linear and mid-green. Z9–11

***O. ecklonis*.** Evergreen, upright or somewhat scandent perennial. H and S 1½ft (45cm). From summer to fall, daisylike, white flower heads, with dark blue centers, are borne singly above lance-shaped, gray-green leaves. Z9–11.

'Blue Streak' see *O.* 'Blue Streak'.

O. jucundum, syn. *Dimorphotheca barberae* of gardens, *O. barberae* of gardens, illus. p.265.

***O.* 'Nairobi Purple'.** Evergreen, semiprostrate perennial. H 1ft (30cm), S 1–1½ft (30–45cm). Has fresh green, lance-shaped leaves. Daisylike, velvety, deep purple-red flower heads, with darker streaks on outside of ray petals, are borne in summer. Will not flower freely in rich soils. Z9–11

***O.* Serenity Series.** Vigorous, compact, branching perennials. H 10–14in (25–35cm), S 14–20in (35–50cm). Mid-green leaves are inversely lance-shaped and sparsely toothed. From late spring to early fall, produces daisylike flower heads, to 3in (8cm) across, in a wide range of colors, including white, pink, yellow, salmon-orange, red, bronze, lavender-purple, and deep purple, sometimes with contrastingdisk-florets; the ray-florets of some cultivars change shades as they age. Z9–11. **'Blue Eyed Beauty'** has flower heads with bright yellow ray-florets with purple bands at the base and blue disk-florets. **'Dark Purple'** illus. p311. **'Peach Magic'** has flower heads with ray-florets that open yellow and fade to soft peach with a hint of purple at the base.

***O.* Sunny Series 'Sunny Marina'** illus. p.301.

***O.* Voltage White ('Balvowhite')** illus. p.300. **Voltage Yellow ('Balvoyelo')** is a compact, branching perennial. H 12–16in (30–40cm), S 24–28in (60–70cm). From late spring to fall, produces daisylike, bright yellow flower heads above inversely lance-shaped, toothed, mid-green leaves. Z9–11

***O.* 'Whirlygig'** illus. p.298.

OSTROWSKIA

CAMPANULACEAE

Genus of one species of summer-flowering perennial. Borderline fully hardy. Prefers a warm, sunny situation and rich, moist but well-drained soil. May be difficult to grow because it requires a resting period after flowering, so cover with a frame until late fall to keep dry. Propagate by seed in fall or spring.

***O. magnifica*.** Erect perennial. H 5ft (1.5m), S 1½ft (45cm). From early to midsummer, bears very large, bell-shaped flowers, delicate light blue-purple, veined with darker purple. Produces whorls of ovate, blue-gray leaves. H4

OSTRYA

BETULACEAE

Genus of deciduous trees, grown for their foliage, catkins, and fruits. Excellent specimen trees for a woodland garden. Fully hardy. Needs sun or partial shade and fertile, well-drained soil. Propagate by seed in fall.

O. carpinifolia (Hop hornbeam). Deciduous, rounded tree. H and S 50ft (15m). Has gray bark and ovate, glossy, dark green leaves that turn yellow in fall. Yellow catkins in mid-spring are followed by hoplike, greenish-white fruit clusters that become brown in fall. H6

O. virginiana (American hop hornbeam, Ironwood) illus. p.72.

***Othonna cheirifolia*.** See *Hertia cheirifolia*.

***Othonnopsis cheirifolia*.** See *Hertia cheirifolia*.

OURISIA

PLANTAGINACEAE/SCROPHULARIACEAE

Genus of evergreen or semievergreen perennials with creeping rootstocks, grown for their flowers. Excellent for peat beds and walls. Fully hardy. Needs shade and moist, peaty soil. Propagate by division or seed in spring.

O. caespitosa illus. p.360.

O. coccinea illus. p.269.

***O.* 'Loch Ewe'.** Vigorous, evergreen, rosetted perennial. H and S 1ft (30cm). Prostrate stems have heart-shaped, leathery, green leaves. Produces dense spikes of outward-facing, tubular, salmon-pink flowers in late spring and early summer. H4

***O. macrocarpa*.** Vigorous, evergreen, prostrate perennial. H 2ft (60cm), S 8in (20cm). Produces rosettes of heart-shaped, leathery, dark green leaves. Spikes of open cup-shaped, yellow-centered, white flowers are borne in late spring. H4

***O. magellanica*.** See *O. ruellioides*.

O. microphylla illus. p.362.

O. ruellioides, syn. *O. magellanica*. Evergreen, scandent perennial. H 1½in (4cm), S to 6in (15cm). In summer, produces tubular, scarlet flowers above broadly heart-shaped, mid-green leaves. H4

OXALIS

OXALIDACEAE

Genus of tuberous, rhizomatous, bulbous or fibrous-rooted annuals and perennials, grown for their vibrant flowers, which in bud are rolled like an umbrella. Their often attractive, cloverlike leaves are mostly less than ¾in (2cm) across and divided into 3 or more leaflets. Some species may be invasive; smaller species and cultivars are suitable for a rock garden. Fully hardy to frost tender. Needs full sun or partial shade and well-drained soil. Propagate by division in early spring or fall.

O. acetosella (Wood sorrel). Creeping, spring-flowering, rhizomatous perennial. H 2in (5cm), S 1–1½ft (30–45cm). Forms mats of cloverlike, 3-lobed leaves. Delicate stems bear cup-shaped, white flowers, each ½in (1cm) across with 5 purple-veined petals. Prefers partial shade. H4.

var. *purpurascens* see *O.a.* var. *subpurpurascens*. **var. *subpurpurascens***, syn. *O.a.* var. *purpurascens*, illus. p.352.

O. adenophylla illus. p.352.

O. bowiei, syn. *O. purpurata* var. *bowiei*. Spring- to summer-flowering, tuberous perennial. H to 1ft (30cm), S 6in (15cm). Has long-stalked, cloverlike, 3-lobed leaves. Stems each produce a loose head of 3–10 widely funnel-shaped, pinkish-purple flowers, 1¼–1½in (3–4cm) across. Needs a sheltered, sunny site. H4

***O. chrysantha*.** See *O. conorrhiza*.

O. conorrhiza, syn. *O. chrysantha*. Creeping, fibrous-rooted perennial. H 1½–2in (4–5cm), S 6–12in (15–30cm). Forms mats of cloverlike, 3-lobed leaves. Stems bear a funnel-shaped, bright yellow flower, ¾–1¼in (2–3cm) across, in summer. Needs a sheltered site. H4

***O. deppei*.** See *O. tetraphylla*.

O. depressa, syn. *O. inops*, illus. p.364.

O. enneaphylla (Scurvy grass). Tuft-forming, rhizomatous perennial. H 2–3in (5–7cm), S 3–4in (8–10cm). Gray-green leaves are divided into narrowly oblong to ovate leaflets. In summer, stems bear widely funnel-shaped lilac-pink or white flowers, 1¼–1½in (3–4cm) across. H4.

'Minutifolia', H 2in (5cm), S 4in (10cm), has a more compact habit, with much smaller leaflets, to ½in (1cm) long, and white flowers. **'Rosea'** has light purple-pink flowers.

***O. hedysaroides*.** Semievergreen, bushy subshrub. H 3ft (1m), S 1–1½ft (30–45cm). Stems have cloverlike, green leaves with 3 elliptical leaflets, the central leaflet on a stalk. Leaf axils bear clusters of widely funnel-shaped, yellow flowers, ¾–1¼in (2–3cm) across, in spring-summer. Z10–11

***O. hirta*.** Late summer-flowering, tuberous perennial. H 1ft (30cm), S 4–6in (10–15cm). Stem bears scattered leaves, with 3 narrowly lance-shaped leaflets. Leaf axils each produce a widely funnel-shaped, rose-purple flower, 2–3cm (¾–1¼in) across, with a yellow center. Z9–11

***O. inops*.** See *O. depressa*.

***O.* 'Ione Hecker'.** Tuft-forming, rhizomatous perennial. H 5cm (2in), S 5–8cm (2–3in). Grey leaves are composed of narrowly oblong, wavy leaflets. In summer, bears funnel-shaped, pale purple-blue flowers, 4cm (1½in) across, with darker veins. H4

***O. laciniata*.** Tuft-forming, rhizomatous perennial. H 5cm (2in), S 5–8cm (2–3in). Has blue-gray leaves with narrowly oblong, crinkly-edged leaflets. In summer, bears wide funnel-shaped, steel-blue flowers, 4cm (1½) across, with darker veins. H4

O. perdicaria illus. p.371.

***O. purpurata* var. *bowiei*.** See *O. bowiei*.

***O. spiralis* subsp. *vulcanicola*.** Evergreen subshrub. H and S 30cm (12in). Succulent, red stems bear cloverlike, 3-lobed leaves in shades of reddish-yellow to dark or mid-green. Widely funnel-shaped, yellow flowers, 1.5cm (⅝in) across, are borne in clusters from spring to fall. Often used in summer bedding or hanging baskets. Z9–11

O. tetraphylla, syn. *O. deppei*, illus. p.338.

***O. vulcanicola*.** See *O. spiralis* subsp. *vulcanicola*.

OXYDENDRUM

ERICACEAE

Genus of one species of deciduous large shrub or small tree, grown for its flowers and spectacular fall color. Fully hardy. For good coloring, plant in an open position in sun or partial shade. Needs moist, acid soil. Propagate by softwood cuttings in summer or by seed in fall.

O. arboreum (Sorrel tree) illus. p.76.

***Oxypetalum caeruleum*.** See *Tweedia caerulea*.

OZOTHAMNUS

ASTERACEAE/COMPOSITAE

Genus of evergreen, summer-flowering shrubs and woody-based perennials, grown for their foliage and small, densely clustered flower heads. Borderline fully to half hardy. Requires full sun and well-drained soil. Propagate by semiripe cuttings in summer.

O. coralloides, syn. *Helichrysum coralloides*, illus. p.347.

O. ledifolius, syn. *Helichrysum ledifolium* (erosene bush), illus. p.151.

O. rosmarinifolius, syn. *Helichrysum rosmarinifolium*. Compact, upright shrub. H 2–3m (6–10ft), S 1.5m (5ft). Produces rosemarylike, linear, dark green leaves, to 4cm (1⅝in) long, woolly beneath, the margins curved under. Fragrant white flower heads, 4mm (⅛in) across, red in bud, are borne in dense, terminal corymbs, 4cm (1½in) across, in early summer. H4

O. selago, syn. *Helichrysum selago*, illus. p.347.

PQ

PACHYCEREUS

CACTACEAE

Genus of slow-growing, columnar, perennial cacti, branching with age. The funnel-shaped flowers are unlikely to be borne in cultivation, as they develop only on plants over 10ft (3m) high. Frost tender. Requires sun and well-drained soil. Propagate by seed in spring or summer.
P. marginatus, syn. *Marginatocereus marginatus, Stenocereus marginatus* (Organ-pipe cactus), illus. p.494.
P. pecten-aboriginum. Columnar, perennial cactus. H 25ft (8m), S 10ft (3m). Dark green stems bear 10–11 deep ribs. Each areole has 8–9 radial spines, ½in (1cm) long, and 1–2 longer central spines. Red-based, dark brown spines fade to gray. In summer, bears night- and day-blooming, funnel-shaped white flowers, with greenish-red outer petals. Z11–12 (min. 50°F/10°C)
P. pringlei illus. p.483.
P. schottii, syn. *Lophocereus schottii*, illus. p.493. **'Monstrosus'** is a columnar, perennial cactus. H 10ft (3m), S 3ft (1m). Irregular, olive- to dark green stems have 4–9 ribs and no spines. Produces funnel-shaped, pink, red, or white flowers, 1¼in (3cm) across, at night in summer. Z11–12 (min. 50°F/10°C)

PACHYPHRAGMA

BRASSICACEAE/CRUCIFERAE

Genus of one species of semievergreen, rhizomatous perennial, grown for groundcover and flowers. Fully hardy. Needs moist, fertile, leafy soil in partial shade; good for planting beneath trees and deciduous shrubs. Propagate by seed in fall or by division in spring.
P. macrophyllum, syn. *Thlaspi macrophyllym*, illus. p.255.

PACHYPHYTUM

CRASSULACEAE

Genus of rosetted, perennial succulents, closely related to *Echeveria,* with which it hybridizes. Frost tender. Needs sun and well-drained soil. Propagate by seed, or leaf or stem cuttings in spring or summer.
P. compactum illus. p.491.
P. oviferum (Moonstones, Sugar almond-plum) illus. p.490.

PACHYPODIUM

APOCYNACEAE

Genus of bushy or treelike, perennial succulents, mostly with swollen stems, closely related to *Adenium,* except that most species have spines. Frost tender. Requires full sun and very well-drained soil. May be very difficult to grow. Propagate by seed in spring or summer.
P. lamerei illus. p.494.
P. succulentum. Treelike, perennial succulent. H 2ft (60cm), S 1ft (30cm). Swollen trunk has narrow, green to gray-brown stems with paired thorns. Bears salverform, pink, white, sometimes red-striped or red, flowers near the stem tips in summer. Z12 (min. 59°F/15°C)

PACHYSANDRA

BUXACEAE

Genus of evergreen or semievergreen, creeping perennials and subshrubs, grown for their tufted foliage. Useful for ground-cover. Fully hardy. Tolerates dense shade and grows in any but very dry soil. Propagate by division in spring.
P. terminalis illus. p.375. **'Green Sheen'**, H 8in (20cm), S indefinite, is a compact, slow-growing, evergreen shrublet. Has clusters of striking, glossy, coarsely toothed, dark green leaves, at the ends of short stems. Bears tiny, white flowers in small spikes, in early summer. Z5–9. **'Variegata'**, H 10in (25cm), S to 2ft (60cm), is spreading, with diamond-shaped, cream-variegated leaves. Flowers are sometimes flushed purple.

PACHYSTACHYS

ACANTHACEAE

Genus of evergreen perennials and shrubs, grown for their flowers. Frost tender. Needs partial shade and fertile, well-drained soil. Water containerized plants freely when in full growth, moderately at other times. Cut back flowered stems in late winter to maintain a bushy habit. Propagate by greenwood cuttings in early summer. Whitefly and red spider mite may cause problems.
P. cardinalis. See *P. coccinea*.
P. coccinea, syn. *Jacobinia coccinea, Justicia coccinea, P. cardinalis* (Cardinal's guard). Evergreen, erect, robust shrub. H to 6ft (2m), S 2–3ft (60cm–1m). Leaves are ovate and deep green. Bears tubular, bright red flowers in tight, green-bracted spikes, 6in (15cm) long, in winter. Z11–12 (min. 55°F/13°C; min. 59–64°F/15–18°C to flower well)
P. lutea (Lollipop plant) illus. p.459.

x PACHYVERIA

CRASSULACEAE

Hybrid genus (*Echeveria* x *Pachyphytum*) of clump-forming, rosetted, perennial succulents, sometimes almost stemless. Frost tender. Requires full sun or partial shade and very well-drained soil. Propagate by leaf or stem cuttings in spring or summer.
x *P. glauca*, syn. *Echeveria* x *fruticosa*, illus. p.490.

PAEONIA

Peony

PAEONIACEAE

Genus of late spring-flowering perennials and deciduous shrubs or subshrubs ("tree peonies"), valued for their bold foliage, showy blooms, and, in some species, colorful seed pods. Fully to frost hardy; most are fully hardy, although young growth (especially on tree peonies) may be damaged by late spring frosts. Prefers sun (but tolerates light shade) and rich, well-drained soil. Tall and very large-flowered cultivars need support. Propagate all species by seed in fall (may take up to 3 years to germinate), tuberous species by root cuttings in winter, tree peonies by semiripe cuttings in late summer, or by grafting in winter. Perennials may also be propagated by division in fall or early spring. Prone to peony wilt. ⓘ All parts can cause mild stomach upset if ingested. See also feature panel pp.228–229.

Flower forms
Unless stated otherwise, peonies described below flower between late spring and early to midsummer and have large, alternate leaves divided into ovate to lance-shaped or linear leaflets. Flowers are single, semidouble, double, or anemone-form.

Single—flowers are mostly cup-shaped, with 1 or 2 rows of large, often lightly ruffled, incurving petals and a conspicuous central boss of stamens.
Semidouble—flowers are similar to single ones, but have 2 or 3 rows of petals.
Double—flowers are rounded, usually composed of 1 or 2 outer rows of large, often lightly ruffled, incurving petals, the remaining petals being smaller, usually becoming more densely arranged and diminishing in size toward the center. Stamens are few, inconspicuous, or absent.
Anemone-form (Imperial or Japanese)—flowers usually have 1 or 2 rows of broad, incurving, outer petals; the center of the flower is often filled entirely with numerous densely arranged, sometimes deeply cut, narrow petaloids derived from stamens.

***P.* 'Alice Harding'.** See *P.* x *lemoinei* 'Alice Harding'.
P. anomala* subsp. *veitchii, syn. *P. veitchii* (illus. p.229). Clump-forming perennial. H and S to 30in (75cm). Has shiny, divided, bright green leaves and produces nodding, cup-shaped, single, purple-pink flowers in late spring and early summer. Z7–10
***P.* 'Argosy'.** See *P.* x *lemoinei* 'Argosy'.
P. arietina, syn. *P. mascula* subsp. *arietina*. Tuberous perennial. H and S to 30in (75cm). Dark green foliage, often with lobed leaflets, is paler and hairy beneath; stems are dark red. Bears single, cup-shaped, reddish-pink flowers in late spring. Seed capsules of 2–5 boat-shaped sections split to reveal purplish-black seeds. Z7–10
***P.* 'Avant Garde'.** Clump-forming perennial. H and S to 3ft (1m). Has luxuriant foliage. Medium-sized to large, fragrant, single flowers are pale rose-pink with darker veins and bright golden anthers that have yellow-red filaments. Flowers are borne on stiff, straight stems in mid-spring and are ideal for cutting. Z7–10
***P.* 'Bartzella'** (Itoh hybrid; illus. p.229). Clump-forming, free-flowering hybrid between a herbaceous perennial and a tree peony. H and S 3ft (90cm). In early summer, produces large, scented, double, lemon-yellow flowers, marked with red. Z7–10
***P.* 'Bowl of Beauty'** (illus. p.228). Clump-forming perennial. H and S to 3ft (1m). Bears very large, striking, anemone-form flowers with pale carmine-pink, outer petals and numerous, narrow, densely arranged, ivory-white, inner petaloids. Z7–10
***P.* 'Buckeye Belle'** (illus. p.229) Clump-forming perennial. H and S 3ft (90cm). Has red-tinged, mid-green leaves and bears semidouble, dark red flowers with a mass of central, golden stamens. Z7–10
P. cambessedesii (Majorcan peony; illus. p.228). Clump-forming perennial. H and S 1½ft (45cm). Has especially attractive foliage, dark green above with veins, stalks and undersurfaces suffused purple-red. Single, deep rose-pink flowers are borne in mid-spring. Z9–11
***P.* 'Cheddar Cheese'.** See *P. lactiflora* 'Cheddar Cheese'.
***P.* 'Cheddar Gold'.** See *P. lactiflora* 'Cheddar Gold'.
***P.* 'Chocolate Soldier'.** Clump-forming perennial. H and S to 3ft (1m). Has mid- to dark green leaves that are often tinged bronze-red when young. Semidouble, deep purple-red flowers, with golden stamens, are borne in early summer. Z7–10
***P.* 'Claire de Lune'** (illus. p.229). Clump-forming perennial. H and S 28–32in (70–80cm). In mid-spring, single, pale yellow flowers, each with a central boss of golden stamens, are borne in pairs. Z7–10
***P.* 'Coral Charm'** (illus. p.228). Clump-forming perennial. H and S 28in (70cm). Has large, divided, dark green leaves. Bears semidouble, peach-pink flowers, opening from darker buds, in late spring or early summer. Z7–10
***P.* 'Coral Fay'.** Clump-forming perennial forming a rather spreading dome. H and S 32–36in (80–90cm). Semidouble, pink-tinged, rich crimson flowers are paler toward the petal bases; stamens are golden-yellow. Z7–10
P. corallina. See *P. mascula* subsp. *mascula*.
***P.* 'Cora Louise'** (Itoh hybrid). Clump-forming, free-flowering hybrid of perennial and tree peony. H 24–32in (60–80cm), S 2ft (60cm). Bears large, scented, semidouble, white flowers with petals marked purplish at the bases. Z7–10
***P.* 'Cornelia Shaylor'.** See *P. lactiflora* 'Cornelia Shaylor'.
P. daurica* subsp. *mlokosewitschii*.** See *P. mlokosewitschii*. **subsp. *wittmanniana see *P. wittmanniana*.
P. decora. See *P. peregrina*.
***P.* 'Defender'.** Clump-forming, vigorous perennial. H and S to 3ft (1m). Single, satiny crimson flowers, to 6in (15cm) across, with a central boss of golden anthers, are borne on strong stems. Z7–10
P. delavayi (Tree peony) illus. p.136.
var. *angustiloba* is a deciduous, upright, open, suckering shrub or subshrub (tree peony). H and S to 3ft (1m). Leaves are deeply divided into pointed-ovate leaflets, often with reddish stalks. In late spring, bears small, bowl-shaped, red, red-purple, yellow, orange, or white flowers, with conspicuous, leafy bracts beneath. Z7–10.
var. *angustiloba* f. *alba* (syn. *P. potaninii* f. *alba*) has white flowers.
var. *angustiloba* f. *angustifolia* (syn. *P. potaninii*) produces dark red, red, or reddish-purple flowers. **var. *angustiloba* f. *trollioides*** (syn. *P. potaninii* var. *trollioides*, *P. trollioides*) has yellow or orange flowers. **var. *delavayi* f. *delavayi*** has dark red to purplish flowers. **var. *delavayi* f. *lutea*** (syn. *P. lutea*; illus. p.229) has orange, yellow, or greenish-yellow flowers, sometimes red at the bases or on the petal margins. **var. *ludlowii*** see *P. ludlowii*.
***P.* 'Early Windflower'.** Clump-forming perennial. H 28in (70cm), S 20in (50cm).

Has bronze-tinged, mid-green leaves and pendent, cupped, single, pure white flowers. Z7–10

P. emodi (illus. p.228). Clump-forming perennial. H and S 24–32in (60–80cm). Glossy, dark green foliage is topped by tall stems bearing several large, fragrant, single, pure white flowers with golden-yellow anthers. Z7–10

***P.* x *festiva*.** Clump-forming, tuberous perennial. H and S to 30in (75cm). Long-lived, with distinctive foliage, divided into broadly ovate leaflets. Z7–10. **'Alba Plena'** (syn. *P. officinalis* 'Rubra Plena') has double, white flowers, sometimes tinged with pink. **'Rosea Plena'** (syn. *P. officinalis* 'Rosea Superba Plena') has large, double, deep rose-pink flowers with slightly ruffled petals. **'Rubra Plena'** (syn. *P. officinalis* 'Rubra Plena'; illus. p.229) has double, vivid pinkish-crimson flowers with ruffled petals.

***P.* 'Flight of Cranes'.** See *P.* x *suffruticosa* 'Renkaku'.

***P.* 'Garden Treasure'** (Itoh hybrid, illus. p.229). Clump-forming, free-flowering hybrid between a herbaceous perennial and a tree peony. H 26in (65cm), S 5ft (1.5). Has glossy, deeply divided, dark green leaves and large, semidouble to double, bright yellow flowers. Z7–10

***P.* 'Globe of Light'.** Clump-forming perennial. H and S to 3ft (1m). Has mid-green leaves and large, fragrant, anemone-form flowers. Outer petals are rose-pink, petaloids clear golden-yellow. Z7–10

***P.* 'High Noon'.** See *P.* x *lemoinei* 'High Noon'.

***P.* 'Jan van Leeuwen'.** See *P. lactiflora* 'Jan van Leeuwen'.

P. japonica (illus. p.228). Compact, clump-forming perennial. H 12–16in (30–40cm), S 8in (20cm). In early spring, pink-tinged stems bear soft green leaves with 7–9 rounded leaflets. Produces short-lived, cup-shaped, single, white flowers; after flowering, the leaves continue to develop and turn to green. Z7–10

***P.* 'Kamada Brocade'.** See *P.* x *suffruticosa* 'Kamada-nishiki'.

***P.* 'Kelway's Majestic'.** See *P. lactiflora* 'Kelway's Majestic'.

***P.* 'Kelway's Supreme'.** See *P. lactiflora* 'Kelway's Supreme'.

***P.* 'Krinkled White'.** See *P. lactiflora* 'Krinkled White'.

P. lactiflora. Variable, clump-forming perennial. H and S 20–28in (50–70cm). Produces bronze or reddish-brown stems with dark green leaves divided into 9 lance-shaped leaflets. In late spring or early summer, 1–3 scented, single, bowl-shaped, white flowers are borne on each stem. More often represented in garden by named selections, most of which are hybrids. Z7–10. **'Cheddar Cheese'** (syn. *H.* 'Cheddar Cheese') bears large, double flowers in midsummer, with ivory-white petals interspersed with shorter, yellow petals. **'Cheddar Gold'** (syn. *H.* 'Cheddar Gold'; illus. p.228) has strongly scented, semidouble flowers, with rounded white petals surrounding a central boss of golden stamens. **'Cornelia Shaylor'** (syn. *H.* 'Cornelia Shaylor') has fragrant, double flowers, flushed rose-pink on opening and fading to bluish-white. **'Duchesse de Nemours'** (syn. *P.* 'Mrs Gwyn Lewis') produces richly fragrant, double flowers with large outer petals, tinged palest green and fading to pure white; dense inner petals are creamy-yellow at the bases. **'Félix Crousse'** (syn. *P.l.* 'Victor Hugo'; illus. p.229) has abundant, fragrant, double, rich carmine-pink flowers with darker red centers. **'Festiva Maxima'** (illus. p.228) bears huge, fragrant, double flowers with rather loosely arranged petals; outer petals are pure white, inner ones each have a basal, crimson blotch. **'Jan van Leeuwen'** (syn. *P.* 'Jan van Leeuwen'; illus. p.228) has scented, white, bowl-shaped, single flowers with large, floppy petals and yellow stamens. **'Kelway's Majestic'** (syn. *P.* 'Kelway's Majestic') bears large, fragrant, anemone-form flowers with bright cherry rose-pink, outer petals and lilac-pink petaloids flecked with silver or pale gold. **'Kelway's Supreme'** (syn. *P.* 'Kelway's Supreme') has large, strongly fragrant, double flowers with soft blush-pink petals, fading to milk-white. Single or semidouble axillary flowers are often produced. **'Krinkled White'** (syn. *P.* 'Krinkled White') has large, bowl-shaped, single, milk-white flowers, sometimes flushed palest pink. Petals are large with ruffled margins. **'Lady Alexandra Duff'** (syn. *P.* 'Lady Alexandra Duff'; illus. p.228) has large, scented, double flowers with soft pink outer petals and smaller, white inner ones. Flowers fade white in sun. **'Laura Dessert'** (syn. *P.* 'Laura Dessert'; illus. p.229) has fragrant, double flowers with creamy blush-white, outer petals. Inner petals are flushed rich lemon-yellow, sometimes with deeply cut margins. **'Mrs Gwyn Lewis'** see *P.l.* 'Duchesse de Nemours'. **'Paul M. Wild'** (syn. *P.* 'Paul M. Wild'; illus. p.229) has large, fully double, bowl-shaped, ruby-red flowers. **'Miss America'**, H 3ft (90cm), bears fragrant, pure white, semidouble flowers, with a central boss of golden stamens, opening from soft-pink buds on sturdy stems. **'Shirley Temple'** (syn. *P.* 'Shirley Temple'; illus. p.228) bears profuse, fully double, soft rose-pink flowers, fading to palest buff-white. **'White Wings'** (syn. *P.* 'White Wings'; illus. p.228) bears abundant, large, fragrant, single flowers with broad, white petals, slightly ruffled at the tips and sometimes tinged sulphur-yellow. **'Whitleyi Major'** (syn. *P.* 'Whitleyi Major'; illus. p.228) has rich reddish-brown foliage and stems and large, single, ivory-white flowers with a satin sheen and central bosses of clear yellow anthers. **'Victor Hugo'** see *P.l.* 'Félix Crousse'.

***P.* 'Lady Alexandra Duff'.** See *P. lactiflora* 'Lady Alexandra Duff'.

***P.* 'Laura Dessert'.** See *P. lactiflora* 'Laura Dessert'.

***P.* x *lemoinei*.** Variable, deciduous, upright, open shrub (tree peony). H and S 5ft (1.5). Bears bold, mid-green leaves divided into pointed leaflets. In early summer, bears large, bowl-shaped, often double flowers in a range of colors, notably yellow. Z3–8. **'Alice Harding'** (syn. *P.* 'Alice Harding'), H and S to 3ft (1m), bears very large, fragrant, double, creamy-white flowers. **'Argosy'** (syn. *P.* 'Argosy'), H and S to 6ft (2m), has magnificent, large, single, lemon-yellow flowers, each with a crimson-purple blotch at its base. Hard to propagate. **'High Noon'** (syn. *P.* 'High Noon'; illus. p.229), H and S 4½ft (1.3m), has semidouble, bright yellow flowers, often marked with crimson toward the centers. **'L'Espérance'** (illus. p.229), H and S to 6ft (2m), has very large, primrose-yellow, single flowers with a carmine blotch at the base of each petal. **'Souvenir de Maxime Cornu'** (syn. *P.* 'Souvenir de Maxime Cornu'), H and S to 6ft (2m), has large, richly fragrant, fully double flowers with warm golden-yellow petals densely arranged toward centers; ruffled margins are dull reddish-orange.

P. lobata. See *P. peregrina*.

P. ludlowii, syn. *P. delavayi* var. *ludlowii*, *P. lutea* var. *ludlowii* (illus. p.229). Deciduous, upright, slightly suckering shrub. H and S 8ft (2.5m). Leaves are divided into sharply pointed, bright green leaflets. Produces large, bright yellow, single flowers, in late spring. Z7–10

P. lutea. See *P. delavayi* var. *delavayi* f. *lutea*. **var. *ludlowii*** see *P. ludlowii*.

***P.* 'Madame Louis Henri'.** Deciduous, upright shrub (tree peony). H and S to 6ft (2m). Bears loosely semidouble, whitish-yellow flowers with large, incurving, outer petals very heavily suffused with rust-red. Smaller, often darker, inner petals each have a basal, dull red blotch. Z7–10

P. mascula* subsp. *mascula, syn. *P. corallina*. Clump-forming perennial. H and S to 3ft (1m). Has hairless leaflets. Bears purple- or carmine-red, occasionally pink or white, flowers with bosses of golden-yellow anthers on purple filaments. Z6–10. **subsp. *arietina*** see *P. arietina*.

P. mlokosewitschii, syn. *P. daurica* subsp. *mlokosewitschii* (Caucasian peony), illus. p.227.

P. obovata* var. *alba (illus. p.228). Erect, clump-forming perennial. H and S 28–36in (70–90cm). Has large, deep green leaves, each with 9 uneven, broadly elliptic leaflets, pale gray-green and slightly hairy beneath. Produces single, cup-shaped, white flowers with purple filaments. Z6–10

***P. officinalis*.** Clump-forming, tuberous perennial. H and S to 2ft (60cm). This single, red apothecaries' peony has long been in cultivation, but is seldom seen today; it has been superseded by larger, often double-flowered hybrids. Z6–10. **'Alba Plena'** see *P.* x *festiva* 'Alba Plena'. **'China Rose'**, H and S to 1½ft (45cm), has handsome, dark green foliage and single flowers with incurving, clear dark salmon-rose petals contrasting with central bosses of orange-yellow anthers. **'Crimson Globe'** H and S 28–34in (70–85cm), bears single, garnet-red flowers with golden-yellow stamens. **'Rosea Superba Plena'** see *P.* x *festiva* 'Rosea Plena'. **'Rubra Plena'** see *P.* x *festiva* 'Rubra Plena'.

***P.* 'Paul M. Wild'.** See *P. lactiflora* 'Paul M. Wild'.

P. peregrina, syn. *P. decora*, *P. lobata*. Clump-forming, tuberous perennial. H and S 20–24in (50–60cm). Has glossy, bright green leaves and bears bowl-shaped, single, ruby-red flowers. Z6–10. **'Otto Froebel'** (illus. p.229) produces large, single, vermilion flowers, tinged with salmon-rose.

***P.* 'Pillow Talk'** (illus. p.228). Clump-forming perennial. H and S 28–32in (70–80cm). In spring, bronze or reddish-stems bear dark green leaves divided into leaflets. Between late spring or early summer, bears double, soft pastel-pink flowers, slightly richer at petal tips. Z7–10

P. potaninii. See *P. delavayi* var. *angustiloba* f. *angustiloba*. **f. *alba*** see *P. delavayi* var. *angustiloba* f. *alba*. **var. *trollioides*** see *P. delavayi* var. *angustiloba* f. *trollioides*.

***P.* 'Red Charm'.** Clump-forming perennial with a rather spreading dome-shaped habit. H and S 32in (80cm). Bears large, double, rich red flowers. Good for cut flowers. Z7–10

P. rockii, syn. *P.* x *suffruticosa* subsp. *rockii*. Deciduous, upright shrub (tree peony). H and S to 7ft (2.2m). In late spring and early summer, bears large, semi-double, white flowers; inner petals each have a basal, dark maroon blotch. Z7–10

***P.* 'Sarah Bernhardt'** (illus. p.228). Vigorous, erect, clump-forming perennial. H and S to 3ft (1m). Bears abundant, huge, fragrant, fully double flowers with large, ruffled, slightly dull rose-pink petals, fading to silvery bluish-white margins. Z7–10

***P.* 'Shirley Temple'.** See *P. lactiflora* 'Shirley Temple'.

***P.* x *smouthii*.** Clump-forming perennial. H and S to 2ft (60cm). Produces abundant, fragrant, single, glistening, dark crimson flowers, with yellow stamens; both flowers and foliage may vary in color. Z7–10

***P.* 'Souvenir de Maxime Cornu'.** See *P.* x *lemoinei* 'Souvenir de Maxime Cornu'.

P.* x *suffruticosa, syn. *P. suffruticosa* (Moutan). Deciduous, upright shrub (tree peony). H and S to 7ft (2.2m). Bears variable, large, cup-shaped flowers, single or semidouble, with incurving, rose-pink or white petals, each sometimes with a basal, usually chocolate-maroon blotch. Has given rise to many cultivars with semidouble and double flowers. Z3–8. **'Cardinal Vaughan'** (illus. p.229) has semidouble, ruby-purple flowers. **'Duchess of Marlborough'**, H and S 5ft (1.5) or more, produces semidouble, soft, warm pink flowers with feathery petals. **'Floral Rivalry'** see *P.* x *s.* 'Hana-kisoi'. **'Godaishu'** (syn. *P.* x *s.* 'Large Globe'), bears semi- or fully double, white flowers with yellow centers amid light green leaves that are fringed and twisted. **'Hana-daijin'** (syn. *P.* x *s.* 'Magnificent Flower'), H and S 6ft (2m) or more, is a vigorous cultivar that bears a profusion of double, purple flowers. **'Hakuo-jisi'** (illus. p.228), H and S 5ft (1.5) or more, is strong-growing and bears large, double, white flowers in early summer; petals are finely marked with purple at the bases. **'Hana-kisoi'** (syn. *P.* x *s.* 'Floral Rivalry'; illus. p.228), has double, pale cerise-pink flowers. **'Kamada-nishiki'** (syn. *P.* 'Kamada Brocade'), H and S to 4ft (1.2m), produces large, double flowers that are lilac-pink striped white at the edge of each petal. **'Large Globe'** see *P.* x *s.* 'Godaishu'. **'Magnificent Flower'** see *P.* x *s.* 'Hana-daijin'. **'Reine Elisabeth'**, H and S to 6ft (2m), has large, fully double flowers with broad, salmon-pink petals, flushed with bright copper-red and lightly ruffled at margins. **'Renkaku'** (syn.

P. 'Flight of Cranes'), H and S to 3ft (1m), bears double flowers, with broad, incurving, slightly ruffled, ivory-white petals, loosely arranged in 3 or more whorls, that surround a large boss of long, golden-yellow anthers. **'Rimpo'** (illus. p.229), H and S 5ft (1.5) or more, has large, scented, semidouble, dark mauve-purple flowers with ruffled petals. **subsp. *rockii*** see *P. rockii*.
'Wu Long Peng Sheng', H and S 10ft (3m), is a Chinese tree peony with scented, rounded, double, magenta-red flowers with golden stamens. **'Yachiyo-tsubaki'** (illus. p.228), H and S 5ft (1.5) or more, has abundant, semidouble, clear pink flowers.
***P. tenuifolia*.** Clump-forming perennial. H and S 20–28in (50–70cm). Elegant leaves are finely divided into many linear segments. Bears single, dark crimson flowers, with golden-yellow anthers. Z7–10
***P. trollioides*.** See *P. delavayi* var. *angustiloba* f. *trollioides*.
***P. veitchii*.** See *P. anomala* subsp. *veitchii*.
***P.* 'White Wings'.** See *P. lactiflora* 'White Wings'.
***P.* 'Whitleyi Major'.** See *P. lactiflora* 'Whitleyi Major'.
P. wittmanniana, syn. *P. daurica* subsp. *wittmanniana*. Clump-forming perennial. H and S to 3ft (1m). Leaves are shiny dark green above, paler beneath. Bears large, single, pale primrose-yellow flowers, each with a large, central boss of yellow anthers on purple-red filaments. Z7–10

PALIURUS

RHAMNACEAE

Genus of deciduous or evergreen, spiny, summer-flowering shrubs and trees, grown for their foliage and flowers. *P. spina-christi* is also grown for its religious association, reputedly being the plant from which Christ's crown of thorns was made. Frost hardy. Needs full sun and well-drained soil. Propagate by softwood cuttings in summer or by seed in fall.
P. spina-christi (Christ's thorn, Jerusalem thorn) illus. p.116.

PAMIANTHE

AMARYLLIDACEAE

Genus of evergreen or deciduous, spring-flowering bulbs, grown for their large, strongly fragrant, showy flowers. Frost tender. Needs partial shade and rich, well-drained soil. Feed with high-potash liquid fertilizer in summer. Reduce watering in winter, but do not allow to dry out. Propagate by seed in spring or by offsets in late winter.
P. peruviana illus. p.399.

PANCRATIUM

Sea lily

AMARYLLIDACEAE

Genus of bulbs with large, fragrant, daffodillike flowers in summer. Frost to half hardy. Needs sun and well-drained soil that is warm and dry in summer when bulbs are dormant. Plant at least 6in (15cm) deep. Feed with a high-potash liquid fertilizer every 2 weeks from fall to spring. Propagate by seed in fall or by offsets detached in early fall.
P. illyricum illus. p.408.
P. maritimum (Sea daffodil). Late summer-flowering bulb. H and S 1ft (30cm). Has strap-shaped, erect, basal, grayish-green leaves. Produces a head of up to 6 white flowers, each with a large, deep cup in the center and 6 spreading petals. Shy-flowering in cultivation. Z9–11

PANDANUS

Screw pine

PANDANACEAE

Genus of evergreen trees and shrubs, grown for their attractive foliage. Flowers and fruits are borne only on large, mature specimens. Frost tender. Needs full light or partial shade and fertile, well-drained soil. Water containerized plants freely when in full growth, moderately at other times. Propagate by seed or suckers in spring or by cuttings of lateral shoots in summer. Red spider mite may be troublesome.
P. odoratissimus of gardens. See *P. tectorius*.
P. tectorius, syn. *P. odoratissimus* of gardens. Evergreen, rounded tree. H to 20ft (6m), S 10ft (3m) or more. Has rosettes of strap-shaped, deep green leaves, 3–5ft (1–1.5m) long, with spiny margins and a spiny midrib beneath. Small flowers, the males in clusters, each with a lance-shaped, white bract, are borne mainly in summer. Fruits are like round pineapples. Z11–12 (min. 55°F/13°C). **'Veitchii'** (syn. *P. veitchii*) illus. p.454.
***P. veitchii*.** See *P. tectorius* 'Veitchii'.

PANDOREA

BIGNONIACEAE

Genus of evergreen, woody-stemmed, twining climbers, rarely shrubs, grown for their flowers and leaves. Frost tender. Grow in sun and in any well-drained soil. Prune after flowering to restrain growth. Propagate by seed sown in spring or by stem cuttings or layering in summer.
P. jasminoides, syn. *Bignonia jasminoides* (Bower vine), illus. p.459.
***P. lindleyana*.** See *Clytostoma callistegioides*.
P. pandorana, syn. *Bignonia pandorana*, *Tecoma australis* (Wonga-wonga vine). Fast-growing, evergreen, woody-stemmed, twining climber. H 20ft (6m) or more. Leaves have 3–9 scalloped leaflets. Bears small, funnel-shaped, cream flowers, streaked and often spotted with red, brown, or purple, in clusters in winter and spring. Z10–12 (min. 41°F/5°C)
***P. ricasoliana*.** See *Podranea ricasoliana*.

PANICUM

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
P. virgatum (Switch grass). Deciduous, rhizomatous, clump-forming, perennial grass. H 3ft (1m), S 30in (75cm). Purple to glaucous, mid-green stems have upright, flat, mid-green leaves that turn yellow in fall and light brown in winter. Bears clusters of tiny, purple-green flowers in early fall. Z4–9. **'Cloud Nine'**, H to 6ft (2m), S to 3ft (1m), is upright, with blue-green foliage that turns golden-yellow in fall. **'Shenandoah'** bears airy panicles of purplish-red flowers.

PAPAVER

Poppy

PAPAVERACEAE

Genus of annuals, biennials, and perennials, some semievergreen, grown for their cup-shaped flowers. Fully hardy to frost hardy. Requires sun or partial shade and prefers moist but well-drained soil. Propagate by seed in fall or spring. *P. orientale* and its cultivars are best propagated by root cuttings in winter. Self-seeds readily.
***P. alpinum* subsp. *burseri*.** See *P. burseri*.
***P. atlanticum*.** Clump-forming, erect, short-lived perennial. H 1ft (30cm), S 6in (15cm). Has ovate, toothed, hairy leaves and, in summer, bears single, dull orange flowers. Good for a rock garden. Z4–7
P. burseri, syn. *P. alpinum* subsp. *burseri*. Semievergreen, tuft-forming, short-lived perennial, best treated as an annual or biennial. H 6–8in (15–20cm), S 4in (10cm). Has finely cut, gray leaves. Produces single, white flowers in summer. Suits a rock garden, wall, or bank. Z4–7
P. cambricum, syn. *Meconopsis cambrica* (Welsh poppy), illus. p.263
***P. commutatum*.** Fast-growing, erect, branching annual. H 1½ft (45cm), S to 6in (15cm). Has elliptic, deeply lobed, mid-green leaves and, in summer, single, red flowers, each with a black blotch in the center. Z3–10
P. fauriei, syn. *P. miyabeanum* of gardens, illus. p.373.
***P.* 'Medallion'** (illus. p.238). Tuft-forming perennial, spreading by stolons. H 34in (85cm), S 28–36in (70–100cm). Has elliptical, lobed, toothed, hairy, mid-green leaves. In early and late summer, numerous upright, stout stems bear large, solitary pinkish-purple flowers that last for several days. Z3–7
P. miyabeanum of gardens. See *P. fauriei*.
P. nudicaule. (Arctic poppy, Icelandic poppy). Erect, tuft-forming, hairy perennial, usually grown as a biennial, spreading by rooting stems. H to 1ft (30cm), S to 6in (15cm). Has ovate, divided, blue-green leaves. Bears solitary, fragrant, bowl-shaped, occasionally double, yellow or white, sometimes orange or pale red flowers, on short stalks in summer. Z3–7.
'Champagne Bubbles Mixed', H 15in (38cm), is vigorous, with white, pink, red, and orange flowers. **Garden Gnome Group** see *P.n.* Gartenzwerg Group.
Gartenzwerg Group (syn. *P.n.* Garden Gnome Group) is dwarf, with flowers mainly in bright hues, including orange-red, yellow, pink, salmon-pink, and white.
***P.* Oriental Group** (Oriental poppy). Clump-forming, hybrid perennials, derived from *P. bracteatum*, *P. orientale*, and *P. pseudo-orientale*. H 20–36in (50–90cm), S 2–3ft (60–90cm). Have erect, white-bristly stems and deeply divided, variously lobed and toothed, rough leaves. In late spring to early summer, bear large, cup- or bowl-shaped, single or semidouble flowers, some with frilled petals. Z3–7.
'Aglaja' (syn. 'Aglaya') has bright salmon-pink flowers with pleated, overlapping petals, each with a small, crimson-black basal mark. **'Allegro'** (syn. *P.* Oriental Group 'Allegro Viva'), H 2–2½ft (60–75cm), has bright scarlet flowers. **'Allegro Viva'** see *P.* Oriental Group 'Allegro'. **'Beauty of Livermere'** illus. p.235. **'Cedric Morris'**, H 28in (70cm), produces soft grayish-pink flowers. **'Indian Chief'** has deep mahogany-red flowers. **'John III'**, H 2ft (60cm), is compact, with gleaming, unblotched, orange-flushed, pinkish-red flowers. **'Karine'** (illus. p.238) has bowl-shaped, soft pale pink flowers marked with dark red blotches. **'Kleine Tänzerin'** bears abundant, ruffled, dark pink flowers. **'May Queen'** bears double, orange flowers. 'Mrs. Marrow's Plum' see 'Patty's Plum'. **'Mrs. Perry'** (illus. p.238) has large, salmon-pink flowers. **'Orange Glow'** (illus. p.238) is robust, with unblotched, bright orange flowers. **'Patty's Plum'** (syn. *P.* Oriental Group 'Mrs. Marrow's Plum'; illus. p.238) produces rich muddy-purple flowers that fade as they age. **'Perry's White'** has satiny, white flowers with purple centers. **'Prinzessin Victoria Louise'** has large, salmon-pink flowers. **'Turkish Delight'** (illus. p.238) bears unblotched, bright salmon-pink flowers. **'Watermelon'** has flowers of vivid watermelon-pink.
P. orientale* var. *bracteatum (illus. p.238). Robust, vigorous perennial. H 4ft (1.2m). Has ruffs of bractlike leaves below the large, deeply cupped, blood-red flowers, which each have black blotches at the base. Z3–8
P. rhoeas (Corn poppy, Field poppy, Flanders poppy). Erect, branching annual. H to 3ft (90cm), S to 1ft (30cm). Has oblong, downy, light green leaves with lance-shaped segments. Solitary, bowl-shaped, bright red flowers, sometimes marked black at the petal bases, are produced on short, downy stalks in summer. H7. **'Fairy Wings'** see *P.r.* 'Mother of Pearl Group'. **'Mother of Pearl Group'** (syn. *P.r.* 'Fairy Wings') produces dove-gray, soft pink, or lilac-blue flowers, with paler zoning. **Shirley Group** (double) has rounded, often cup-shaped, double flowers, in shades of red, pink or white, including bicolors; (single) illus. p.310.
P. somniferum (Opium poppy). Fast-growing, upright annual. H 4ft (1.2m), S 1ft (30cm). Has oblong, lobed, light grayish-green leaves. Large, single flowers, in shades of red, pink, purple or white, are produced in summer. Z3–7. Several double-flowered forms are available, including **Carnation-flowered Series**, with fringed flowers in mixed colors; **'Paeoniiflorum Group'** illus. p.303; and **'White Cloud'**, which produces large, white flowers.

PAPHIOPEDILUM

Slipper orchid

ORCHIDACEAE

① Contact with foliage may aggravate skin allergies. See also ORCHIDS.
***P. appletonianum*.** Evergreen, terrestrial orchid. H 1ft (30cm), S 6in (15cm). Bears green flowers, 5in (12cm) across, each with a pouched, brownish lip and pink-flushed petals, singly on tall, slender stems in spring. Ovate, mottled leaves, are 8in (20cm) long. Requires shade in summer. Z11–12 (min. 55°F/13°C; max. 86°F/30°C)

P. armeniacum (illus. p.467). Evergreen, terrestrial orchid. H 20in (50cm), S 10in (25cm). Creeping rhizome produces strap-shaped leaves, 2½–6in (6–15cm) long, marbled light and dark green above, purple spotted beneath. In spring, pouch-lipped, bright yellow flowers, 2½–4½in (6–11cm) across, with red lines in the centers, are borne singly on a stem 8–16in (20–40cm) long. Needs shade in summer. Z11–12 (min. 50°F/10°C; max. 86°F/30°C)

P. bellatulum (illus. p.467). Evergreen, terrestrial orchid. H 5in (12cm), S 6in (15cm). Bears almost stemless, rounded, pouch-lipped, white flowers, 3½in (9cm) across, spotted with dark maroon, singly in spring. Ovate, marbled leaves are 1ft (30cm) long. Grow in shade in summer. Z11–12 (min. 55°F/13°C; max. 86°F/30°C)

***P.* Buckhurst gx 'Mont Millais'** (illus. p.467). Evergreen, terrestrial orchid. H 1ft (30cm), S 6in (15cm). Rounded, yellow-and-white flowers, to 5in (12cm) across and lined and spotted with red, are borne singly in winter. Has ovate leaves, 6in (15cm) long. Needs shade in summer. Z11–12 (min. 55°F/13°C; max. 86°F/30°C)

***P. callosum*.** Evergreen, terrestrial orchid. H 1ft (30cm), S 6in (15cm). Purple- and green-veined, white flowers, 3in (8cm) across, are borne on tall stems in spring–summer. Has ovate, mottled leaves, 10in (25cm) long. Needs shade in summer. Z11–12 (min. 55°F/13°C; max. 86°F/30°C)

P. fairrieanum (illus. p.467). Evergreen, terrestrial orchid. H and S 6in (15cm). Rich purple- and green-veined flowers, 2½–3in (6–8cm) across, with curved petals and orange-brown pouches, are borne singly in fall. Ovate leaves are 3½–6in (9–15cm) long. Grow in shade in summer. Z11–12 (min. 50°F/10°C; max. 86°F/30°C)

***P.* Freckles gx** (illus. p.466). Evergreen, terrestrial orchid. H 1ft (30cm), S 8in (20cm). Rounded, reddish-brown-spotted and pouched, white flowers, 5in (12cm) across, are borne singly in winter. Has ovate leaves, 6in (15cm) long. Needs shade in summer. Z11–12 (min. 55°F/13°C; max. 86°F/30°C)

***P. haynaldianum*.** Evergreen, terrestrial or lithophytic orchid. H 1½ft (45cm), S 1ft (30cm). Long-petaled, brown-marked, green-, pink-and-white flowers, to 5in (13cm) across, are borne singly in summer. Has ovate leaves, to 16in (40cm) long. Needs shade in summer. Z11–12 (min. 55°F/13°C; max. 86°F/30°C)

***P.* Lyric gx 'Glendora'** (illus. p.467). Evergreen, terrestrial orchid. H 1ft (30cm), S 8in (20cm). Rounded, glossy, white-red-and-green flowers, 5in (12cm) across, are borne singly in winter. Has ovate leaves, 6in (15cm) long. Needs shade in summer. Z11–12 (min. 55°F/13°C; max. 86°F/30°C)

***P.* Maudiae gx** (illus. p.467). Evergreen, terrestrial orchid. H 1ft (30cm), S 6in (15cm). Clear apple-green or deep reddish-purple flowers, 4in (10cm) across, are borne singly on long stems in spring or early summer. Has ovate, mottled leaves, 5in (12cm) long. Needs shade in summer. Z11–12 (min. 55°F/13°C; max. 86°F/30°C)

***P. niveum*.** Evergreen, terrestrial orchid. H and S 6in (15cm). White flowers, 3in (8cm) across, are produced singly, mainly in spring. Ovate, marbled leaves are 4–6in (10–15cm) long. Needs shade in summer. Z11–12 (min. 55°F/13°C; max. 86°F/30°C)

P. rothschildianum (illus. p.467). Evergreen, clump-forming, terrestrial orchid. H 2ft (60cm) and S 1½ft (45cm). Spikes, 1½ft (45cm) long, of 2–6 pouch-lipped, creamy-yellow flowers, with maroon stripes, mahogany pouch, and elongated petals, to 5½in (14cm) long, are produced in summer. Has strap-shaped, mid-green leaves, to 20in (50cm) long. Needs shade in summer. Z11–12 (min. 55°F/13°C; max. 86°F/30°C)

***P. sukhakulii*.** Evergreen, terrestrial orchid. H and S 6in (15cm). In spring to summer, purple-pouched, black-spotted, green flowers, 4–5in (10–12cm) across, are borne singly on tall stems. Has ovate, mottled leaves, 6in (15cm) long. Grow in shade in summer. Z11–12 (min. 55°F/13°C; max. 86°F/30°C)

***P. venustum*.** Evergreen, terrestrial orchid. H and S 6in (15cm). Variably colored flowers, ranging from pink to orange with green veins and darker spots, are 3in (8cm) across and borne singly in fall. Has ovate, mottled leaves, 10in (25cm) long. Needs shade in summer. Z11–12 (min. 50°F/10°C; max. 86°F/30°C)

PARADISEA

Paradise lily, St Bruno's lily

ASPARAGACEAE

Genus of clump-forming perennials, grown for their flowers, which are good for cutting. Fully hardy. Requires a sunny site and fertile, well-drained soil. Propagate by division in spring or by seed in fall. After division may not flower for a season.

***P. liliastrum*.** Clump-forming perennial. H 1–2ft (30–60cm), S 1ft (30cm). Produces short rhizomes and grasslike leaves. One-sided spikes of 2–10 white flowers, with conspicuous yellow anthers, are borne in late spring or early summer. Z6–9

***P. lusitanica*.** Upright, clump-forming perennial. H 32–48in (80–120cm), S 12–16in (30–40cm). Has basal rosettes of linear leaves. Spikes of 8–40 small, white flowers, are borne in summer. Z6–9

PARAHEBE

PLANTAGINACEAE

Genus of evergreen or semievergreen, summer-flowering perennials, subshrubs and shrubs, often classified under *Hebe* and *Veronica*. Suitable for rock gardens. Borderline fully hardy to frost hardy. Needs sun and well-drained, peaty, sandy soil. Propagate by semiripe cuttings in early summer.

P. catarractae illus. p.342. **'Delight'**, H and S to 1ft (30cm), is a lax or upright, evergreen subshrub with ovate to lance-shaped, toothed, dark green leaves, purple-tinged when young. Bears clusters of small, saucer-shaped, red-veined, lilac-blue to purple-blue flowers in summer. Z7–10

***P. lyallii*.** Semievergreen, prostrate shrub. H 10in (25cm), S 20in (50cm). Has ovate, toothed, leathery leaves. In early summer, erect stems bear loose sprays of flattish, pink-veined, white flowers. Z7–10. **'Julie Anne'** is compact, with a profusion of pink-veined, white flowers.

P. perfoliata, syn. *Veronica perfoliata* (Digger's speedwell), illus. p.271.

PARAQUILEGIA

RANUNCULACEAE

Genus of tufted perennials, grown for their cup-shaped flowers and fernlike foliage. Hard to cultivate and flower successfully. Prefers dry winters and cool climates. Good in alpine houses and troughs. Fully hardy. Needs sun and gritty, well-drained, alkaline soil. Propagate by seed in fall.

P. anemonoides, syn. *P. grandiflora*, illus. p.350.

***P. grandiflora*.** See *P. anemonoides*.

PARASERIANTHES

MIMOSACEAE/LEGUMINOSAE

Genus of one species of deciduous tree or large shrub, grown for its feathery foliage and unusual flower heads, composed of numerous stamens and resembling bottlebrushes. Frost tender. In frost-prone areas, grow against a warm, sunny wall or under glass; in cold areas, do not plant out until late spring. Needs full sun and well-drained soil. Propagate by seed in spring.

P. lophantha, syn. *Albizia distachya*, *A. lophantha* (Cape wattle), illus. p.89.

PARIS

SYN. DAISWA

MELANTHIACEAE/LILIACEAE

Genus of summer-flowering, rhizomatous perennials. Fully hardy to frost hardy. Needs shade or partial shade and humus-rich soil. Propagate by division in spring or by seed in fall. Flowers are followed by fleshy fruits with black or red seeds. ☠ These may cause mild stomach upset if ingested.

P. polyphylla, syn. *Daiswa polyphylla*. Erect, rhizomatous perennial. H 2–3ft (60–100cm), S to 1ft (30cm). Leaves, in whorls at stem tips, are lance-shaped to ovate and mid-green. In early summer, at tips of slender stems, produces unusual flowers comprising a ruff of green sepals and another ruff of greenish-yellow petals, marked with crimson above, crowned by a violet-purple stigma. Z7–10

***P. quadrifolia*.** Upright, rhizomatous perennial. H 6–16in (15–40cm), S 1ft (30cm). Erect stems each have a whorl of mid-green leaves. In late spring, bears solitary, star-shaped flowers, with mid-green outer petals, white inner petals, and twice as many stamens as inner petals. Blue-black, berrylike capsules follow. Z5–9

PARKINSONIA

CAESALPINIACEAE/LEGUMINOSAE

Genus of evergreen or decidous, spring-flowering shrubs and trees, grown for their flowers and overall appearance. Frost tender. Needs as much sunlight as possible to thrive, a dry atmosphere and fertile, free-draining soil. Water potted specimens moderately when in full growth, sparingly at other times. Pruning is tolerated, but spoils the natural habit. Propagate by seed in spring.

P. aculeata (Jerusalem thorn). Evergreen, feathery shrub or tree with a spiny, green stem. H to 30ft (10m), S 15–25ft (5–8m) or more. Long, linear leaves have winged midribs bearing tiny, elliptic, short-lived leaflets. Produces fragrant, 5-petaled, yellow flowers in arching racemes in spring. Z10–12 (min. 41°F/5°C)

PARNASSIA

PARNASSIACEAE

Genus of rosetted, mainly summer-flowering perennials, grown for their saucer-shaped flowers. Good for rock gardens. Fully hardy. Needs sun and wet soil. Propagate by seed in fall.

P. palustris (Grass of Parnassus) illus. p.336.

PAROCHETUS

PAPILIONACEAE/LEGUMINOSAE

Genus of one variable species of evergreen perennial. Grows best in an alpine house. Borderline fully hardy to half hardy. Needs partial shade and gritty, moist soil. Propagate by division of rooted runners in any season.

P. communis (Shamrock pea) illus. p.370.

PARODIA

SYN. ERIOCACTUS, NOTOCACTUS, WIGGINSIA

CACTACEAE

Genus of single or clustering, rounded, perennial cacti with tubercles arranged in ribs that often spiral around green stems. Crown forms woolly buds, then funnel-shaped flowers. Frost tender. Requires full sun or partial shade and very well-drained soil. Water very lightly in winter; tends to lose roots during a long period of drought. Propagate by seed in spring or summer.

P. chrysacanthion illus. p.496.

P. concinna, syn. *Notocactus apricus, N. concinnus*. Flattened spherical, perennial cactus. H 2½in (6cm), S 4in (10cm). Much-ribbed, pale green stem is densely covered with short, soft, golden-brown spines. In summer, crown produces flattish, glossy, bright yellow flowers, 3in (8cm) across, with purple stigmas. Prefers partial shade. Z10–11 (min. 41°F/5°C)

P. erinacea, syn. *Wigginsia erinacea*, *W. vorwerkiana*. Slow-growing, flattened spherical, perennial cactus. H 6in (15cm), S 10in (25cm). Glossy stem, with 15–30 wartlike ribs and yellow-white spines bears yellow flowers in summer. Z10–11 (min. 41°F/5°C)

***P. graessneri*.** See *P. haselbergii* subsp. *graessneri*.

P. haselbergii* subsp. *graessneri, syn. *P. graessneri, Notocactus graessneri*. Slow-growing, flattened spherical, perennial cactus. H 4in (10cm), S 10in (25cm). Bristlelike, golden spines cover a much-ribbed, green stem. Slightly sunken crown bears funnel-shaped, glossy, greenish-yellow flowers, with yellow stigmas, in early spring. Prefers partial shade. Z10–11 (min. 41°F/5°C) **subsp. *haselbergii*** (syn. *Notocactus haselbergii;* Scarlet ball cactus) illus. p.487.

P. leninghausii, syn. *Eriocactus leninghausii, Notocactus leninghausii*. Simple or clump-forming, perennial cactus. H to 2ft (60cm), S 8in (20cm). Woolly crown always slopes toward sun. In summer, on plants more than

4in (10cm) tall, yellow flowers open flat. Z10–11 (min. 41°F/5°C)
P. mammulosa, syn. *Notocactus mammulosus*. Spherical, perennial cactus. H 4in (10cm), S 2½in (6cm). Green stem has 13–21 ribs and straight, stiff, yellow-brown to white spines, to ½in (1cm) long. Woolly crown produces abundant, golden flowers in summer. Z10–11 (min. 41°F/5°C)
P. microsperma, syn. *P. mutabilis, P. sanguiniflora*. Clump-forming, perennial cactus. H 3in (8cm), S 1ft (30cm). Has a much-ribbed, green stem densely covered with brown, radial spines and red, central spines, some of which are hooked. Bears blood-red, occasionally yellow, flowers in spring. Z11–12 (min. 50°F/10°C)
P. mueller-melchersii, syn. *Notocactus rutillans*, *P. rutilans,* illus. p.486.
P. mutabilis. See *P. microsperma*.
P. nivosa illus. p.487.
P. ottonis, syn. *Notocactus ottonis*. Variable, spherical, perennial cactus. H 1¼–6in (3–15cm), S 7in (18cm). Has a pale to dark green stem with 6–15 rounded ribs bearing stiff, golden radial spines and longer, soft, red central spines. In summer, crown bears flattish, glossy, golden flowers, 3in (8cm) across, with purple stigmas. Offsets freely from stolons. Prefers sun. Z10–11 (min. 41°F/5°C)
P. rutilans. *See P. mueller-melchersii.*
P. sanguiniflora. See *P. microsperma*.
P. scopa, syn. *Notocactus scopa* (Silver ball cactus). Spherical to columnar, perennial cactus. H 2–20in (5–50cm), S 4in (10cm). Stem, with 25–40 ribs, is densely covered with white radial spines and longer, red central spines, 3 or 4 per areole. Crown bears funnel-shaped, glossy, yellow flowers, 1½in (4cm) across, with purple stigmas, in summer. Prefers a sunny position. Z10–11 (min. 41°F/5°C)

PARONYCHIA

Whitlow-wort

CARYOPHYLLACEAE

Genus of annuals and evergreen perennials making loose mats of prostrate stems. Good carpeting plants for rock gardens and for walls. Fully to half hardy. Needs sun and well-drained soil. Propagate by division in spring.
P. capitata, syn. *P. nivea*. Vigorous, evergreen, mat-forming perennial. H to 2in (5cm), S 1ft (30cm). Silvery leaves are small and ovate. In summer, produces tiny flowers within papery bracts. Good groundcover. (borderline) Z5–8
P. kapela* subsp. *serpyllifolia illus. p.375.
P. nivea. See *P. capitata*.

PARROTIA

HAMAMELIDACEAE

Genus of deciduous trees, grown for their flowers and fall color. Fully hardy, but flower buds may be killed by hard frosts. Requires full sun and grows best in fertile, moist but well-drained soil. Lime-tolerant, but usually colors best in acidic soil. Propagate by softwood cuttings in summer or by seed in fall.
P. persica (Persian ironwood) illus. p.77. **'Vanessa'** is an upright, columnar tree. H 25–30ft (8–10m), S 6–10ft (2–3m), Has bronze to red-margined young leaves, turning crimson, purple, orange, and gold in fall. In late winter to early spring, bears dense, globular heads of flowers with conspicuous, red anthers. Good choice for small gardens. Z5–7

PARROTIOPSIS

HAMAMELIDACEAE

Genus of one species of deciduous shrub, grown for its ornamental, dense flower heads surrounded by conspicuous bracts. Fully hardy. Needs sun or partial shade. Grows in any fertile, well-drained soil except very shallow soil over chalk. Propagate by softwood cuttings in summer or by seed in fall.
P. jacquemontiana. Deciduous, upright shrub. H 20ft (6m), S 12ft (4m). Has witch-hazellike, dark green leaves that turn yellow in fall. From mid- to late spring and in summer, bears clusters of minute flowers, with tufts of yellow stamens, surrounded by white bracts. Z5–7

PARTHENOCISSUS

VITACEAE

Genus of deciduous, woody-stemmed, tendril climbers, grown for their leaves, which often turn beautiful colors in fall. Broad tips of tendrils have suckerlike pads that cling to supports. Has insignificant, greenish flowers in summer. Will quickly cover north-or east-facing walls or fences and may be grown up large trees. Fully to frost hardy. Grow in partial shade or shade and in well-drained soil. Propagate by softwood or greenwood cuttings in summer or by hardwood cuttings in early spring. ⓘ The berries may cause mild stomach upset if ingested.
P. henryana, syn. *Vitis henryana*. Deciduous, tendril climber with 4-angled, woody stems. H to 30ft (10m) or more. Leaves have 3–5 toothed, ovate leaflets, each to 5in (12cm) long, and are velvety, deep green, or bronze with white or pinkish veins. Small, dark blue berries are produced in fall. Leaf color is best with a shaded aspect. Z7–8
P. quinquefolia, syn. *Vitis quinquefolia* (Virginia creeper). Deciduous, woody-stemmed, tendril climber. H 50ft (15m) or more. Leaves have 5 ovate, toothed, dull green leaflets, paler beneath, that turn a beautiful crimson in fall. Bears blue-black berries in fall. Will cover a high wall or building, but can be invasive. Z3–9
P. striata. See *Cissus striata*.
P. thomsonii. See *Cayratia thomsonii*.
P. tricuspidata (Boston ivy, Japanese ivy) illus. p.209. **'Lowii'** illus. p.209. **'Veitchii'** (syn. *Ampelopsis veitchii*) illus. p.210.

PASSIFLORA

Passion flower

PASSIFLORACEAE

Genus of mostly evergreen, woody-stemmed, tendril climbers, grown for their unique flowers, each one with a central corona of filaments. Also includes a few annuals, perennials, shrubs, and trees. Produces egg-shaped to rounded, fleshy, edible fruits that mature to orange or yellow in fall. Fully hardy to frost tender. Grow in full sun or partial shade and fertile, well-drained soil. Water freely in full growth, less at other times. Stems need support. Thin out crowded growth in spring. Propagate by seed in spring or by semiripe cuttings in summer.
P. alata. Robust climber. H to 20ft (6m) or more. Has square stems and broadly ovate, sometimes finely toothed, rich to light green leaves. From spring to late summer, pale crimson buds open to nodding, fragrant, bowl-shaped, bright carmine flowers; crowns have purple, red, and white zones. Yellow fruits are egg- to pear-shaped. Z10–12 (min. 41–45°F/5–7°C)
P.* x *allardii, syn. *P.* 'Allardii'. Strong-growing, evergreen, woody-stemmed, tendril climber. H 22–30ft (7–10m). Has 3-lobed leaves. In summer–fall, bears white flowers, 3–4in (7–10cm) across, tinted pink, with purple-banded crowns. Z7–11
***P.* 'Allardii'.** See *P.* x *allardii*.
***P.* 'Amethyst'**, syn. *P. amethystina* of gardens, *P.* 'Lavender Lady', *P. violacea* of gardens. Vigorous climber. H 12ft (4m) or more. Has smooth, slender stems and deeply 3-lobed, rich green leaves. In late summer and fall, bears bowl-shaped, purple to purple-blue flowers with green anthers and darker crown filaments, followed by ovate, orange fruits. Z9–11
***P. amethystina* of gardens.** See *P.* 'Amethyst'.
P. caerulea (Common passion flower) illus. p.204. **'Constance Elliot'** is a fast-growing, evergreen or semievergreen, woody-stemmed, tendril climber. H 30ft (10m) or more. Has rich green, deeply divided leaves. From summer to fall, produces bowl-shaped, fragrant, white flowers with pale blue or white filaments. Z7–9. **'White Lightning'** has ivory-white flowers with violet-blue filaments.
P.* x *caeruleoracemosa. See *P.* x *violacea*.
***P.* x *caponii* 'John Innes'.** Strong-growing, evergreen, woody-stemmed, tendril climber. H 25ft (8m). Has 3-lobed leaves. Bears bowl-shaped, nodding, white flowers, flushed claret-purple, with purple-banded, white crowns, from summer to fall. Z12 (min. 59°F/15°C)
P. coccinea, syn. *P. fulgens*, *P. velutina* (Red grenadilla), illus. p.462.
***P.* 'Damsel's Delight'**, syn. *P.* 'Silly Cow'. Vigorous, evergreen or semievergreen, tendril climber. H 10–15ft (3–5m). From summer to fall, bears white to pale lilac flowers, 5in (12cm) across, with bright violet-blue filaments. Z8–11
P.* x *exoniensis. Fast-growing, evergreen, woody-stemmed, tendril climber. H 25ft (8m) or more. Leaves have 3 deep lobes and are softly downy. Rose-pink flowers, 3in (8cm) across, that have purple crowns with white teeth, are borne in summer to fall. Z10–11 (min. 41°F/5°C)
P. fulgens. See *P. coccinea*.
***P.* 'Incense'.** Vigorous climber. H to 10ft (3m). Has deeply lobed, rich green leaves. From late spring to early fall, bears lacy, fragrant, bowl-shaped, violet-mauve flowers, with crowns of wavy filaments, white near the bases. Egg-shaped, edible but acidicic, yellow fruits are borne in summer and fall. Z10–11
***P.* 'Lavender Lady'.** See *P.* 'Amethyst'.
P. manicata. Fast-growing, evergreen, woody-stemmed, tendril climber. H 10–15ft (3–5m). Has slender, angular stems and 3-lobed leaves. Red flowers, with deep purple and white crowns, are borne from spring to fall. Z10–11 (min. 41°F/5°C)
P. quadrangularis (Giant grenadilla) illus. p.462.
P. racemosa (Red passion flower). Fast-growing, evergreen, tendril climber with slender, woody stems. H 15ft (5m). Has wavy, leathery leaves with 3 deep lobes. Bears clusters of pendent, crimson flowers, 3–4in (8–10cm) across, with white- and purple-banded crowns, in summer and fall. Z12 (min. 61°F/16°C)
P. sanguinea. See *P. vitifolia*.
***P.* 'Silly Cow'.** See *P.* 'Damsel's Delight'.
P. velutina. See *P. coccinea*.
P.* x *violacea, syn. *P.* x *caeruleo-racemosa*. Vigorous, evergreen, woody-stemmed, tendril climber. H 30ft (10m). Has 3-lobed leaves. Purple flowers, 3in (8cm) across, are borne from summer to fall. Z10–11 (min. 41°F/5°C)
P. violacea of gardens. See *P.* 'Amethyst'.
P. vitifolia, syn. *P. sanguinea*. Evergreen, woody-stemmed, tendril climber; slender stems have fine, brown hairs. H to 15ft (5m). Has 3-lobed, lustrous leaves. In summer–fall, bears bright scarlet flowers, 5in (13cm) across, each with a short crown, banded red, yellow and white. Z12 (min. 61°F/16°C)

PATERSONIA

IRIDACEAE

Genus of evergreen, clump-forming, spring- and early summer-flowering, rhizomatous perennials. Frost tender. Requires full sun and light, well-drained soil. Leave undisturbed once planted. Propagate by seed in fall.
P. umbrosa. Evergreen, clump-forming, rhizomatous perennial. H to 3ft (1m), S 1ft (30cm). Has erect, basal leaves and tough flower stems bearing a succession of irislike, purple-blue flowers, 1¼–1½in (3–4cm) across, in summer. Z10–12 (min. 41°F/5°C)

PATRINIA

CAPRIFOLIACEAE

Genus of clump-forming perennials, grown for their flowers. Suitable for rock gardens and peat beds. Fully hardy. Needs a site in partial shade with moist soil. Propagate by division in spring or by seed in fall. Self-seeds freely.
P. triloba illus. p.275.

PAULOWNIA

PAULOWNIACEAE/SCROPHULARIACEAE

Genus of deciduous trees, grown for their large leaves and foxglovelike flowers, borne before the foliage emerges. Fully hardy, but flower buds and young growth of small plants may be damaged by very hard frosts. Requires full sun and fertile, moist but well-drained soil. Propagate by seed in fall or spring, or by root cuttings in winter.
P. fortunei. Deciduous, spreading tree. H and S 25ft (8m). Has large, ovate, mid-green leaves. In late spring, bears large, fragrant flowers, purple-spotted and white inside, pale purple outside. Z5–9. **Fast Blue** ('Minfast') starts flowering at only 3–4 years old.

***P. imperialis*.** See *P. tomentosa*.
P. tomentosa, syn. *P. imperialis* (Foxglove tree, Princess tree), illus. p.72.

PAVONIA

MALVACEAE

Genus of evergreen, mainly summer-flowering perennials, shrubs, and subshrubs, grown usually for their flowers. Frost tender. Needs full light or partial shade and humus-rich, well-drained soil. Water freely when in full growth, moderately at other times. Leggy stems may be cut back hard in spring. Propagate by seed in spring or by greenwood cuttings in summer. Whitefly and red spider mite may be troublesome.
***P. hastata*.** Evergreen, erect shrub. H 6–10ft (2–3m), S 3–6ft (1–2m). Lance-shaped to ovate, mid-green leaves, have 2 basal lobes. In summer, bears funnel-shaped, pale red to white flowers, with darker basal spotting. Z11–12 (min. 50°F/10°C)

***Pedilanthus tithymaloides*.** See *Euphorbia tithymaloides*.
***Pedrosedum repestre*.** See *Sedum rupestre*.

PELARGONIUM

Geranium

GERANIACEAE

Genus of mainly evergreen perennials, succulents, subshrubs, and shrubs, often cultivated as annuals. Grown for their colorful flowers and useful in pots or as bedding plants. Usually flower from spring to summer; many flower almost continuously in warm conditions, at above 45–50°F (7–10°C). Frost hardy to frost tender. A sunny site with 12 hours of daylight is required for good flowering, Prefer well-drained, neutral to alkaline soil. Dislike very hot, humid conditions. Deadhead frequently and fertilize regularly if grown in containers; do not overwater. Plants may be kept through winter in the greenhouse by cutting back in fall or winter to 5in (12cm) and repotting. Propagate by softwood cuttings from spring to fall. ⓘContact with the foliage may aggravate skin allergies.

Pelargoniums may be divided into 6 groups; all flower in summer–fall unless stated otherwise. See also feature panel p.309.

Angel—bushy, evergreen perennials and subshrubs, with rounded, sometimes scented, usually mid-green leaves, and clusters of small, single flowers of the regal type.
Ivy-leaved—trailing, evergreen perennials, ideal for hanging baskets, with lobed, sometimes pointed, stiff, fleshy, usually mid-green leaves and flowers similar to those of zonal pelargoniums.
Regal—shrubby, evergreen perennials and shrubs with rounded, sometimes lobed or partially toothed, mid-green leaves and clusters of single, rarely double, broadly trumpet-shaped, exotic-colored flowers; prone to weather damage in the open.
Scented-leaved and species—shrubby, evergreen perennials and shrubs with small, single, often irregularly star-shaped flowers; scented-leaved forms are grown for their fragrance.
Unique—Tall-growing, shrubby, evergreen perennials with rounded or lobed, sometimes incised, mid-green leaves, often with a pungent scent when crushed. They produce clusters of single, trumpet-shaped, brightly colored flowers of the regal type, throughout the season.
Zonal—succulent-stemmed, evergreen perennials with rounded leaves, marked distinctively with a darker "zone," and single (5-petaled), semidouble or fully double flowers. Zonal pelargoniums can be further separated into the double- and semidouble-flowered group (which includes fancy-leaved, Formosum hybrid, rosebud, single-flowered, and stellar groups) and the cactus-flowered group.

***P. acetosum*.** Erect, evergreen perennial. H 20–24in (50–60cm), S 8–10in (20–25cm). Stems are succulent with fleshy, gray-green leaves, often margined red. Bears single, salmon-pink flowers. Good as a potted plant in a greenhouse. Z10–12 (min. 36°F/2°C)
***P.* Amethyst ('Fisdel').** Evergreen, trailing, ivy-leaved pelargonium. H 10–12in (25–30cm), S to 8–10in (20–25cm). Leaves are fleshy with pointed lobes. Bears semidouble, purple flowers, the upper petals with deep purple and white feathering. Z10–12 (min. 36°F/2°C)
***P.* Antik Series.** Vigorous, evergreen, single-flowered zonal pelargoniums grown as climbers or, with pinching, as groundcover. H and S 36–48in (90–120cm). Have rounded, lobed, plain green leaves and large clusters of flowers in orange, pink, violet, salmon, or scarlet. Z10–12 (min. 36°F/2°C). **Antik Salmon ('Tiksal')** (illus. p.309) bears salmon-pink flowers.
***P.* 'Apple Blossom Rosebud'.** Evergreen, rosebud zonal pelargonium. H 1ft (30cm), S 9in (23cm). Fully double, pinkish-white flowers, margined with red, look like miniature rosebuds. Z10–12 (min. 36°F/2°C)
***P.* 'Ardens'.** Prostrate, evergreen, species hybrid pelargonium. H 4–5in (10–13cm), S 6–7in (15–18cm). Has divided, bluntly lobed, irregularly toothed, gray-green leaves. In early and midsummer, bears clusters of long-stalked, saucer-shaped, crimson-red flowers, with black blotches. Z10–12 (min. 36°F/2°C)
***P.* 'Attar of Roses'** (illus. p.309). Scented-leaved pelargonium. H 20–24in (50–60cm), S 10–12in (25–30cm). Produces 3-lobed, rose-scented leaves and clusters of mauve flowers. Z10–12 (min. 36°F/2°C)
***P.* 'Barbe Bleu'.** Ivy-leaved pelargonium. H 20–24in (50–60cm), S 8–10in (20–25cm). Bears clusters of double, purple-black flowers, fading to wine-red in full sun. Z10–12 (min. 36°F/2°C)
***P.* 'Bird Dancer'.** Dwarf, stellar zonal pelargonium. H 6–8in (15–20cm), S 5–6in (12–15cm). Bears clusters of single flowers, with pale pink lower petals and salmon-pink upper petals. Z10–12 (min. 36°F/2°C)
***P.* Blue Wonder ('Pacbla')** (illus. p.309). Evergreen, semidouble-flowered, zonal pelargonium. H 1ft (30cm), S 16in (40cm). Has rounded, lobed, plain green leaves and large clusters of vivid, rich lilac flowers (not blue). Z10–12 (min. 36°F/2°C)
***P.* 'Brookside Primrose'** (illus. p.309). Dwarf, fancy-leaved zonal pelargonium. H 4–5in (10–12cm), S 3–4in (7–10cm). Rounded leaves each have a dark brown butterfly mark in the center. Bears double, pale pink flowers. Z10–12 (min. 36°F/2°C)
***P.* Bullseye Series.** Evergreen, compact, single-flowered zonal pelargoniums. H 13–15in (33–38cm), S 11–13in (28–33cm). Have rounded, lobed, chocolate-brown leaves with green edges. Produce large clusters of flowers in shades of red or pink, or a mixture. Propagate by seed. Z10–12 (min. 36°F/2°C). **'Bullseye Salmon'** (illus. p.309) has salmon-pink flowers.
***P. capitatum*.** Evergreen, scented-leaved pelargonium. H 1–2ft (30–60cm), S 1ft (30cm). Has irregularly 3-lobed leaves that smell faintly of roses and mauve flowers. Mainly used to produce geranium oil for the perfume industry, but may be grown as a potted plant. Z10–12 (min. 36°F/2°C)
***P. carnosum*.** Deciduous, shrubby pelargonium (unclassified), with thick, succulent stems and a woody, swollen, tuberlike rootstock. H 16in (40cm), S 10in (25cm). Has long, gray-green leaves with triangular, deeply lobed leaflets. Produces branched, umbellike flower heads with white or greenish-yellow flowers, the upper petals streaked red and shorter than the green sepals. Z11–12 (min. 50°F/10°C)
***P.* 'Charity'.** Bushy, scented-leaved pelargonium. H 8–10in (20–25cm), S 6–8in (15–20cm). Has deeply cut, mid-green leaves with broad gold margins and a sharp orange scent. Bears clusters of pale mauve flowers. Z10–12 (min. 36°F/2°C)
***P.* 'Chew Magna'.** Evergreen, regal pelargonium. H 1–1½ft (30–45cm), S to 1ft (30cm). Each petal of the pale pink flowers has a wine-red blaze. Z10–12 (min. 36°F/2°C)
***P.* 'Clorinda'** (illus. p.309). Vigorous, scented-leaved pelargonium. H 18–20in (45–50cm), S 8–10in (20–25cm). Leaves smell of cedar and are 3-lobed. Bears large, single, rose-pink flowers. Suitable for a greenhouse or patio. Z10–12 (min. 36°F/2°C)
***P.* 'Coddenham'.** Miniature, double-flowered zonal pelargonium. H 4–5in (10–12cm), S 3–4in (7–10cm). Bears clusters of orange-red flowers. Z10–12 (min. 36°F/2°C)
***P.* 'Copthorne'.** Vigorous, scented-leaved pelargonium. H 18–20in (45–50cm), S 8–10in (20–25cm). Large-lobed leaves exude an exotic, spicy scent. Bears clusters of mauve flowers with purple feathering on the upper petals. Z10–12 (min. 36°F/2°C)
***P. crispum* 'Variegatum'.** Evergreen, upright, scented-leaved pelargonium. H 14–18in (35–45cm), S 5–6in (12–15cm). Has gold-variegated leaves and small, pale mauve flowers. Foliage becomes creamy-white in winter. Z10–12 (min. 36°F/2°C)
***P.* 'Crocodile'.** Compact, short-jointed, ivy-leaved pelargonium. H and S 6–8in (15–20cm). Has mid-green leaves overlaid with a creamy-white mesh. Produces clusters of single, bright cerise-pink flowers. Z10–12 (min. 36°F/2°C)
***P.* 'Dale Queen'.** Evergreen, bushy, single-flowered zonal pelargonium. H 9–12in (23–30cm), S 9in (23cm). Flowers are delicate salmon-pink. Particularly suitable for a pot. Z10–12 (min. 36°F/2°C)
***P.* 'Deacon Golden Lilac Mist'.** Bushy, fancy-leaved zonal pelargonium. H 10–12in (25–30cm), S 6–8in (15–20cm). Leaves are gold marked with bronze. Bears double, lavender-pink flowers. Good for window-boxes. Z10–12 (min. 36°F/2°C)
***P.* Decora Series.** Evergreen, trailing ivy-leaved pelargoniums. H 6–8in (15–20cm), S to 4ft (1.2m). Have fresh green leaves without a dark zone, and narrow-petaled flowers in red, lilac, or shades of pink. Z10–12 (min. 36°F/2°C). **'Decora Dark Pink'** (illus. p.309) has dark rose-pink flowers.
***P.* 'Dolly Varden'.** Evergreen, fancy-leaved zonal pelargonium. H 10–12in (25–30cm), S 5–6in (12–15cm). Green leaves are marked purple-brown, white and crimson. Bears clusters of single, scarlet flowers. Z10–12 (min. 36°F/2°C)
***P.* 'Emma Hössle'.** See *P.* 'Frau Emma Hössle'.
***P.* 'Evka'** (illus. p.309). Evergreen, trailing, bushy, ivy-leaved pelargonium. H 8–10in (20–25cm), S 6–8in (15–20cm). Has pale green leaves edged in creamy-white. Bears clusters of small, single, deep rose-red flowers. Z10–12 (min. 36°F/2°C)
***P.* 'Fair Ellen'.** Compact, scented-leaved pelargonium. H and S 1ft (30cm). Has dark green leaves and pale pink flowers marked with red. Z10–12 (min. 36°F/2°C)
***P.* Fireworks Series.** Bushy, compact, scented-leaved pelargoniums. H 8–10in (20–25cm), S 6–8in (15–20cm). Have matte, shallowly 5-lobed, aromatic, dark green leaves, the lobes suffused purplish-green. From spring to early fall, produce upright, dense clusters of red, white, pink, or bicolored flowers, each with 5 sharply pointed lobes. Z11–12 (min. 50°F/10°C)
Fireworks Scarlet ('Fiwoscarl') (illus. p.309) has bright scarlet flowers.
***P.* 'Flower of Spring'.** Vigorous, evergreen, fancy-leaved zonal pelargonium. H 18–24in (45–60cm), S 8–10in (20–25cm). Has rounded, silver leaves and single, red flowers. Z10–12 (min. 36°F/2°C)
***P.* Fragrans Group**, syn. *P. fragrans*, *P.* x *fragrans*. Evergreen, very bushy, scented-leaved pelargonium. H 8–10in (20–25cm) S 6–8in (15–20cm). Rounded, shallowly lobed, gray-green leaves smell strongly of pine. Produces small, white flowers. Z10–12 (min. 36°F/2°C)
***P.* 'Fraiche Beauté'**, syn. *P.* 'Fraicher Beauty' (illus. p.309). Evergreen, double-flowered, zonal pelargonium. H 1ft (30cm), S 9in (23cm). Flowers are perfectly formed with delicate coloring: white with a thin, red edge to each petal. Excellent as a potted plant. Z10–12 (min. 36°F/2°C)
***P.* 'Fraicher Beauty'.** See *P.* 'Fraiche Beauté'.
***P.* 'Francis Parrett'.** Evergreen, short-jointed, double-flowered zonal pelargonium. H 4–5in (10–12cm), S 3–4in (7–10cm). Bears purplish-pink flowers and has small, green leaves. Good for a windowsill. Z10–12 (min. 36°F/2°C)
***P.* 'Frank Headley'.** Compact, zonal pelargonium. H 1½ft (45cm), S 1ft (30cm). Has rounded, gray-green leaves, edged creamy-white. Bears clusters of salmon-pink flowers. Z10–12 (min. 36°F/2°C)
***P.* 'Frau Emma Hössle'**, syn. *P.* 'Emma Hössle'. Evergreen, dwarf, double-flowered, zonal pelargonium. H 8–10in (20–25cm), S 6in (15cm). Bears large, mauve-pink flowers. Useful for a window box. Z11–12 (min. 50°F/10°C)
***P.* 'Friesdorf'.** Evergreen, fancy-leaved, zonal pelargonium. H 6–8in (15–20cm), S 4–5in (10–12cm). Has dark green foliage

and produces narrow-petaled, single, crimson flowers. Excellent for a window box or for planting in a large group. Z10–12 (min. 36°F/2°C)

***P.* 'Gustav Emich'.** Vigorous, evergreen, double-flowered, zonal pelargonium. H 16–18in (40–45cm), S 8–10in (20–25cm). Semidouble flowers are orange-scarlet. Z10–12 (min. 36°F/2°C)

***P.* 'Happy Thought'** illus. p.307.

***P.* 'Highfields Festival'.** Compact, double-flowered, zonal pelargonium. H 12–14in (30–35cm), S 10–12in (25–30cm). White-eyed, pink flowers are borne in clusters. Z10–12 (min. 36°F/2°C)

***P.* Horizon Divas Series.** Evergreen, single-flowered, zonal pelargoniums. H 12–14in (30–35cm), S 10–12in (25–30cm). Have rounded, lobed, often bronze-zoned, mid-green leaves and large, domed heads of flowers with a speckled or picotee pattern, or a combination of the two. Propagate by seed. Z10–12 (min. 36°F/2°C).

'Horizon Divas Orange Ice' (illus. p.309) is white with an orange picotee and veining and orange on the reverse.

'Horizon Divas Raspberry Ripple' (illus. p.309) is white with a rich pattern of deep red speckles and occasional streaks.

***P.* 'Irene'.** Evergreen, semidouble-flowered, zonal pelargonium. H 16–18in (40–45cm), S 10–12in (25–30cm). Bears large, light crimson blooms. Z10–12 (min. 36°F/2°C)

***P.* 'Ivalo'.** Evergreen, bushy, short-jointed, semidouble-flowered, zonal pelargonium. H 9–12in (23–30cm), S 9in (23cm). Large, semidouble flowers are pale pink with crimson-dotted, white centers. Z11–12 (min. 50°F/10°C)

***P.* 'Jackie'**, syn. *P.* 'Jackie Gall'. Very bushy, slow-growing, ivy-leaved pelargonium. H and S 6–8in (15–20cm). Has small leaves and clusters of rosebud-like, double, pale lavender-pink flowers. Z10–12 (min. 36°F/2°C)

***P.* 'Jackie Gall'.** See *P.* 'Jackie'.

***P.* 'Lachskönigin'** (illus. p.309). Evergreen, trailing, brittle-jointed, ivy-leaved pelargonium. H 10–12in (25–30cm), S 6–8in (15–20cm). Has fleshy leaves, with pointed lobes, and semidouble, deep rosy-pink flowers. Suitable for a hanging basket or window box. Z10–12 (min. 36°F/2°C)

***P.* 'Lady Plymouth'** (illus. p.309). Scented-leaved pelargonium. H 12–16in (30–40cm), S 6–8in (15–20cm). Has silver-margined, eucalyptus-scented leaves and lavender-pink flowers, borne in clusters. Z10–12 (min. 36°F/2°C)

***P.* 'Lara Starshine'.** Bushy, spreading scented-leaved pelargonium. H and S 8–10in (20–25cm). Has deeply cut, sharply scented leaves. Bears clusters of white-eyed, pink flowers, the upper petals of each overlaid, veined, and feathered carmine-pink. Z10–12 (min. 36°F/2°C)

***P.* 'L'Elégante'.** Evergreen, trailing ivy-leaved pelargonium. H 8–10in (20–25cm), S 6–8in (15–20cm). Foliage is variegated with creamy-white margins, sometimes turning pink at the edges. Bears semi-double, pale mauve flowers. Best grown in a hanging basket. Z10–12 (min. 36°F/2°C)

***P.* 'Mabel Grey'.** Evergreen, scented-leaved pelargonium. H 12–14in (30–35cm), S 1–1½ft (30–45cm). Has diamond-shaped, rough-textured, toothed, strongly lemon-scented leaves, with 5–7 pointed lobes, and mauve flowers. Z10–12 (min. 36°F/2°C)

***P.* Maverick Series.** Evergreen, single-flowered, zonal pelargoniums. H 16–18in (40–45cm), S 14–18in (35–45cm). Have rounded, lobed, mainly bronze-zoned, mid-green leaves. Produce large, domed flower heads in reds, pinks, a bicolor, or white. Propagate by seed. Z10–12 (min. 36°F/2°C). **'Maverick Star'** (illus. p.309) is blushed white with deep rose-pink eyes.

***P.* 'Mini Cascade'.** Evergreen, trailing, short-jointed, ivy-leaved pelargonium. H and S 1–1½ft (30–45cm). Bears many single, red flowers. Regular deadheading is essential for continuous display. Z10–12 (min. 36°F/2°C)

***P.* 'Mr. Henry Cox'**, syn. *P.* 'Mrs. Henry Cox'. Evergreen, fancy-leaved zonal pelargonium. H 10–12in (25–30cm), S 4–5in (10–12cm). Mid-green leaves are marked with red, yellow, and purple-brown. Flowers are single and pink. Z10–12 (min. 36°F/2°C)

***P.* 'Mrs. G.H. Smith'.** Upright, compact, angel pelargonium. H 8–10in (20–25cm), S 6–8in (15–20cm). Bears clusters of white flowers with a crimson blotch on each upper petal. Z10–12 (min. 36°F/2°C)

***P.* 'Mrs. Henry Cox'.** See *P.* 'Mr. Henry Cox'.

***P.* 'Mrs. Pollock'.** Evergreen, single-flowered, zonal pelargonium. H 1ft (30cm), S 6in (15cm). Each golden leaf has a gray-green butterfly mark in its center, with a bronze zone running through it. Has small, orange-red flowers. Z10–12 (min. 36°F/2°C)

***P.* 'Mrs. Quilter'** illus. p.319.

***P.* Multibloom Series.** Single-flowered, zonal pelargoniums. H 10–12in (25–30cm), S 1ft (30cm). Abundant flowers in shades of white, pink, and red, some with white eyes, are borne in clusters. Flower early and over a long period. Tolerates wet. Propagated by seed. Z10–12 (min. 36°F/2°C)

***P.* 'Paton's Unique'.** Vigorous, unique pelargonium with pungent-smelling leaves. H 16–18in (40–45cm), S 6–8in (15–20cm). Flowers are single, red or pale pink, each with a small, white eye. Z10–12 (min. 36°F/2°C)

***P. peltatum*.** Evergreen, trailing, brittle-jointed pelargonium from which ivy-leaved cultivars have been derived. H and S to 5ft (1.5). Has fleshy leaves, with pointed lobes. Bears single, mauve or white flowers. Cultivars suit hanging baskets and window boxes. Z10–12 (min. 36°F/2°C)

***P.* 'Polka'.** Vigorous, unique pelargonium. H 18–20in (45–50cm), S 8–10in (20–25cm). Flowers are semidouble. Upper petals are orange-red, blotched, and feathered deep purple; lower ones are salmon-orange. Z10–12 (min. 36°F/2°C)

***P.* 'Prince of Orange'.** Scented-leaved pelargonium. H 10–12in (25–30cm), S 6–8in (15–20cm). Small, rounded leaves smell of orange. Has single, mauve flowers. Good as a house plant. Z10–12 (min. 36°F/2°C)

***P.* 'Purple Unique'.** Vigorous, evergreen, upright, shrubby, unique pelargonium. H and S 3ft (1m) or more. Rounded, large-lobed leaves are very aromatic. Has single, open trumpet-shaped, light purple flowers. Does well when trained against a sunny wall. Z10–12 (min. 36°F/2°C)

***P.* Regalia Series.** Evergreen, bushy, single-flowered, regal pelargoniums. H and S 12–15in (30–38cm). Bear prolific clusters of flowers in pink, deep purple, red, lilac, or salmon, all with darker marks in the throats. Z10–12 (min. 36°F/2°C). The crimson flowers of **'Regalia Chocolate'** (illus. p.309) have deep purplish-red marks.

***P.* 'Rimfire'.** Spreading, regal pelargonium. H 12–16in (30–40cm), S 30–38cm (12–14in). Deep mahogany flowers, edged salmon-red, are borne in clusters. Z10–12 (min. 36°F/2°C)

***P.* 'Robyn Hannah'** illus. p.307.

***P.* 'Rollisson's Unique'.** Evergreen, shrubby, unique pelargonium. H 16–18in (40–45cm), S 6–8in (15–20cm). Has ovate, notched, pungent leaves and small, single, open trumpet-shaped, wine-red flowers with purple veins. Z10–12 (min. 36°F/2°C)

***P.* 'Rouletta'.** Vigorous, evergreen, trailing, ivy-leaved pelargonium. H 20–24in (50–60cm), S 6–8in (15–20cm). Bears semidouble, red-and-white flowers. To control shape, pinch out growing tips regularly. Z10–12 (min. 36°F/2°C)

***P.* 'Royal Oak'.** Evergreen, bushy, compact, scented-leaved pelargonium. H 15in (38cm), S 1ft (30cm). Oaklike, slightly sticky leaves have a spicy fragrance and are dark green with central, brown markings. Flowers are small and mauve-pink. Z10–12 (min. 36°F/2°C)

***P.* 'Splendide'.** Slow-growing, short-branching pelargonium. H 10–12in (25–30cm), S 6–8in (15–20cm). Butterfly-shaped flowers are borne singly or in clusters. Dark red upper petals have a black spot at the base; lower petals are white, sometimes stained red. Z10–12 (min. 36°F/2°C)

***P.* Sprinter Series.** Slow-growing, evergreen, branching, bushy, single-flowered, zonal pelargoniums. H and S 1–2ft (30–60cm). Have rounded, lobed, light to mid-green leaves. Bear large, domed flower heads in shades of red. Very free-flowering. Z10–12 (min. 36°F/2°C)

***P.* 'Sweet Mimosa'.** Scented-leaved pelargonium. H 9–10in (23–25cm), S 6–8in (15–20cm). Has deeply lobed, pungently scented leaves and clusters of mid-pink flowers with carmine splashes and feathering on the upper petals. Z10–12 (min. 36°F/2°C)

***P.* 'The Boar'.** Evergreen, trailing pelargonium. H 20–24in (50–60cm), S 8–10in (20–25cm). Has unusual, 5-lobed, notched leaves, each with a central, dark brown blotch, and long-stemmed, single, salmon-pink flowers. Useful for a hanging basket. Z10–12 (min. 36°F/2°C)

***P.* 'Timothy Clifford'.** Evergreen, short-jointed, semidouble-flowered, zonal pelargonium. H 6–8in (15–20cm), S 4in (10cm). Has dark green leaves and fully double, salmon-pink flowers. Suits a windowsill. Z10–12 (min. 36°F/2°C)

***P.* 'Tip Top Duet'** (illus. p.309). Evergreen, bushy, free-branching, angel pelargonium. H 12–16in (30–40cm), S 6–8in (15–20cm). Leaves and blooms are small for this type. Bears pink-veined, white flowers; uppermost petals have dark burgundy blotches. Z10–12 (min. 36°F/2°C)

P. tomentosum (Peppermint geranium). Evergreen, bushy, scented-leaved pelargonium. H 30–36in (75–90cm), S 24–30in (60–75cm). Large, rounded, shallowly lobed, velvety, gray-green leaves have a strong peppermint aroma. Bears clusters of small, white flowers. Pinch out growing tips to control spread. Dislikes full sun. Z10–12 (min. 36°F/2°C)

***P.* 'Vancouver Centennial'.** Stellar zonal pelargonium. H 10–12in (25–30cm), S 6–8in (15–20cm). Has bronze and brown leaves. Bear clusters of single, orange-red flowers. Z10–12 (min. 36°F/2°C)

***P.* 'Voodoo'** (illus. p.309). Unique pelargonium. H 20–24in (50–60cm), S 8–10in (20–25cm). Flowers are single and pale burgundy with a purple-black blaze on each petal. Suitable as a greenhouse potted plant. Z10–12 (min. 36°F/2°C)

***P.* 'Yale'.** Long-jointed, trailing, ivy-leaved pelargonium. H 8–10in (20–25cm), S 6–8in (15–20cm). Bears clusters of semidouble, red flowers. Z10–12 (min. 36°F/2°C)

PELIOSANTHES

ASPARAGACEAE

Genus of evergreen, rhizomatous perennials, grown for their foliage and delicate flowers. Fully to half hardy. Grow in moist but well-drained, fertile, acidic soil in semi- or full shade. Propagate by divisions of the rhizome in spring or by seed in fall.

P. arisanensis illus. p.472.

PELLAEA

PTERIDACEAE

Genus of deciduous or evergreen ferns. Fully hardy to frost tender. Grow in partial shade and gritty, moist but well-drained soil. Remove fading fronds regularly. Propagate by spores in summer.

P. rotundifolia (Button fern). Evergreen fern. H to 1ft (30cm), S 16in (40cm). Small, narrowly lance-shaped, divided fronds are dark green and have rounded pinnae. Z10–11

***Pellionia*.** See *Elatostema*.

PELTANDRA

Arrow arum

ARACEAE

Genus of rhizomatous, herbaceous perennials, grown for their foliage and suitable for wet soils. Grow in full sun at the margins of a pond. Fully hardy. Propagate by division of the rhizome when dormant, or by seed in spring.

***P. undulata*.** See *P. virginica*.

P. virginica, syn. *P. undulata*, illus. p.443.

***Peltiphyllum*.** See *Darmera*.

PENNISETUM

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.

***P.* x *advena* 'Rubrum'**, syn. *P. setaceum* 'Rubrum', illus. p.312.

P. alopecuroides, syn. *P. compressum* (Fountain grass). Tuft-forming, herbaceous, perennial grass. H 2–5ft (0.6–1.5m), S 2–4ft (0.6–1.2m). Has narrow, mid-green leaves; leaf sheaths each have a hairy tip. In late summer, bears arching, cylindrical panicles with decorative, purple bristles that last well into winter. Z5–9.

'Cassian's Choice', H and S to 3ft (90cm), has bright green leaves, which turn yellowish-orange in fall, and pale brown flowers in summer.

P. compressum. See *P. alopecuroides*.
P. longistylum. See *P. villosum*.
P. orientale. Densely tufted, mound-forming, herbacous, perennial grass. H 2ft (60cm), S 30in (75cm). Has long, upright or arching, dark green leaves. In mid- and late summer, bears long, softly bristled, pink flower heads, resembling bottle brushes. Z5–8
P. rueppellii. See *P. setaceum*.
P. setaceum, syn. *P. rueppellii* (Fountain grass). Tuft-forming, herbaceous, perennial grass. H 3ft (1m), S 1½ft (45cm). Has very rough, mid-green leaves and stems. In summer, bears dense, cylindrical panicles of copper-red spikelets, with decorative, bearded bristles, that last well into winter. Z9–11. **'Rubrum'** see *P.* x *advena* 'Rubrum'.
P. villosum, syn. *P. longistylum* (Feathertop), illus. p.286.

PENSTEMON

PLANTAGINACEAE

Genus of perennials and subshrubs, most of which are semievergreen or evergreen. Fully to frost hardy. Prefers full sun and fertile, well-drained soil. Propagate species by seed in fall or spring, or in midsummer by softwood or semiripe cuttings of non-flowering shoots; cultivars only by cuttings. See also feature panel pp.236-237.
***P.* 'Alice Hindley'** (illus. p.236). Large-leaved, semievergreen perennial. H 3ft (90cm), S 1½ft (45cm). Mid-green leaves are linear to lance-shaped. Bears tubular to bell-shaped, pale lilac-blue flowers, white inside, tinged mauve-pink outside, from midsummer to early or mid-fall. Z6–10
***P.* 'Andenken an Friedrich Hahn'**, syn. *P.* 'Garnet' (illus. p.237). Vigorous, semi-evergreen, bushy perennial. H 30in (75cm), S 2ft (60cm). Has narrow, fresh green leaves. Bears sprays of tubular, deep wine-red flowers from midsummer to fall. Z5–9
***P.* 'Apple Blossom'** (illus. p.236). Semievergreen, bushy perennial. H and S 18–24in (45–60cm). Bears sprays of small, tubular, pale pink flowers from midsummer onward above narrow, fresh green foliage. Z9–11
***P.* 'Barbara Barker'.** See *P.* 'Beech Park'.
P. barbatus, syn. *Chelone barbata* (illus. p.237). Semievergreen, rosette-forming perennial. H 6ft (1.8m), S 12–20in (30–50cm). From midsummer to early fall, bears racemes of slightly nodding, tubular, 2-lipped, rose-red flowers. Flower stems rise from rosettes of oblong to ovate, mid-green leaves. Z4–8
***P.* 'Beech Park'**, syn. *P.* 'Barbara Barker' (illus. p.236). Semievergreen perennial. H 30in (75cm), S 10in (25cm). Leaves are linear and light green. Bears bright pink and white flowers. Z6–10
***P.* 'Blackbird'.** Vigorous, semievergreen perennial. H 32in (80cm), S 20in (50cm). Has willowy, purplish-red stems clothed in long, lance-shaped, dark green leaves. Bears racemes of deep red-purple flowers, the throats densely streaked deep red, from late summer to fall. Z6–10
***P.* 'Burford Seedling'.** See *P.* 'Burgundy'.
***P.* 'Burford White'.** See *P.* 'White Bedder'.
***P.* 'Burgundy'**, syn. *P.* 'Burford Seedling' (illus. p.237). Robust, semievergreen perennial. H 3ft (90cm), S 1½ft (45cm). Leaves are linear and light green. Produces purplish-red flowers with white throats streaked dark red. Z6–10
P. campanulatus, syn. *P. pulchellus*. Semievergreen, upright perennial. H 1–2ft (30–60cm), S 1½ft (45cm). Long racemes of bell-shaped, dark purple, violet or, occasionally, white flowers are borne in early summer above lance-shaped, toothed, mid-green leaves. Z7–10
***P.* 'Candy Pink'.** See *P.* 'Old Candy Pink'.
P. cardwellii. Spreading, sometimes stem-rooting, evergreen subshrub. H 4–8in (10–20cm), S 1ft (30cm). Mid-green leaves are elliptic and finely toothed. Bears racemelike panicles of slender, tubular to funnel-shaped, deep purple flowers in early summer. (borderline) Z7–10
***P.* 'Cherry'** (illus. p.237). Semievergreen perennial. H 3ft (1m), S 2ft (60cm). Has lance-shaped, mid-green leaves. From midsummer to fall, produces an abundance of deep rose-red flowers, with a golden sheen and white throats, streaked deep red. Z9–11
***P.* 'Chester Scarlet'** (illus. p.237). Semievergreen perennial. H 2ft (60cm), S 1½ft (45cm). Large, bright red flowers are borne above narrowly lance-shaped, light green leaves. Z9–11
P. confertus. Semievergreen, neat, clump-forming perennial. H 1½ft (45cm), S 1ft (30cm). Produces spikes of tubular, creamy-yellow flowers above long, lance-shaped, mid-green leaves in early summer. Z7–10
***P.* 'Connie's Pink'.** Erect, much-branched, semievergreen perennial. H 4ft (1.2m), S 2ft (60cm). Pale green leaves are ovate to lance-shaped. Bears slender, bright rose-pink flowers, with deep pink petal lobes and red-penciled, white throats, from early summer to fall. Z6–9
***P.* 'Countess of Dalkeith'**, syn. *P.* 'Purple and White'. Erect, semievergreen perennial. H 2ft (60cm), S 1½ft (45cm). Leaves are linear and light green. In summer and fall, produces large, reddish-purple, white-throated flowers. Z3–7
P. davidsonii. Evergreen, prostrate subshrub. H 8in (20cm), S 16in (40cm). In late spring and early summer, funnel-shaped, violet to ruby-red flowers, with protruding lips, develop from leaf axils. Leaves are small, ovate to rounded, and leathery. Trim after flowering. Z4–8.
var. *menziesii* 'Microphyllus', H to 3in (7cm), S 10in (25cm), is dense and mat-forming, and bears violet-blue flowers. Good planted at a trough edge.
P. diffusus. See *P. serrulatus*.
***P. digitalis* 'Husker Red'** (illus. p.236). Vigorous, semievergreen or deciduous, basal-rosetted perennial. H 20–30in (50–75cm), S 1ft (30cm). Has stems often marked reddish-purple and inversely lance-shaped, unlobed, sparsely toothed, mid-green leaves that are maroon-red when young. Produces panicles of tubular to bell-shaped, pink-tinted, white flowers, with purple lines inside, in summer. Z3–8
***P.* 'Ellenbank Amethyst'.** Bushy, semievergreen perennial. H 3ft (90cm), S 1½ft (45cm). Has lance-shaped, mid-green leaves. In summer, bears racemes of large, tubular, soft purple, white-throated flowers, each edged vivid rosy-purple. Z5–8
***P.* 'Evelyn'** illus. p.233.
***P.* 'Firebird'.** See *P.* 'Schoenholzeri'.
***P.* 'Flamingo'** (illus. p.236). Open, much-branched, semievergreen perennial. H 3ft (95cm), S 2ft (60cm). Has mid-green, ovate to lance-shaped leaves. From summer to fall, bears white-throated, deep purplish-pink flowers, the white diffusing to petal lobes, with a few darker, reddish-pink pencilings on lower lobes. Z6–10
P. fruticosus. Evergreen, upright subshrub. H and S to 16in (40cm). Has lance-shaped to ovate, toothed leaves. In early summer, produces funnel-shaped, lipped, lavender-blue flowers. Suitable for a rock garden. Trim back after flowering. Z6–10.
var. *scouleri* (syn. *P. scouleri*) bears pale to deep purple flowers.
var. *scouleri* 'Albus' (illus. p.236) produces white flowers.
***P.* 'Garnet'.** See *P.* 'Andenken an Friedrich Hahn'.
***P.* 'Geoff Hamilton'.** Vigorous, semi-evergreen perennial. H 30in (75cm), S 2ft (60cm). Has lance-shaped to ovate, mid-green leaves. Produces large, open, purple flowers, with white throats and white-flecked lobes, from early summer to fall. Z7–10
***P.* 'George Home'.** Narrow-leaved perennial. H 30in (75cm), S 1½ft (45cm). Produces small, tubular to bell-shaped, wine-red flowers, with white throats, the white extending over the lips, from midsummer to early or mid-fall. Z9–11
P. glaber (illus. p.237). Evergreen, variable subshrub. H 20–26in (50–65cm), S 1ft (30cm). Has mid-green, lance-shaped to inversely ovate leaves. In late summer, produces clusters of snapdragonlike, sky-blue to indigo flowers, with maroon pencilings in the white or pale blue throats. Needs a sunny, dry site. (borderline) Z3–10
P. hartwegii. Semievergreen, erect perennial. H 2ft (60cm) or more, S 1ft (30cm). Lance-shaped leaves are mid-green. Bears sprays of slightly pendent, tubular to bell-shaped, scarlet flowers from mid- to late summer. Z8–10. **'Albus'** bears slender, creamy-white flowers. **'Picotee Red'** has red, white-throated flowers.
P. heterophyllus (Foothill penstemon). Evergreen subshrub. H and S 12–20in (30–50cm). In summer, produces racemes of tubular to funnel-shaped, pinkish-blue flowers, with blue or lilac lobes. Leaves are linear to lance-shaped, unlobed, and mid-green or bluish-green. (borderline) Z6–10.
'Heavenly Blue' (illus. p.237), H and S to 16in (40cm), produces tubular, mauve-tinged, blue flowers from midsummer until the first frosts. **'True Blue'** has pale green leaves and pure blue flowers, borne on short side shoots. Trim back after flowering. Suitable for a rock garden.
***P.* 'Hidcote Pink'** (illus. p.236). Narrow-leaved perennial. H 24–30in (60–75cm), S 1–2ft (30–60cm). Produces small, tubular, pale pink flowers, with spreading lobes marked with crimson lines inside, from midsummer to early or mid-fall. Z9–11
P. hirsutus. Short-lived, evergreen, open subshrub. H 16–32in (40–80cm), S 1–2ft (30–60cm). Leaves are ovate and dark green. In summer, produces hairy, tubular, lipped, purple- or blue-flushed, white flowers. Suitable for a rock garden. Z4–8. **var. *pygmaeus*** illus. p.361.
***P.* 'Hopley's Variegated'** (illus. p.237). Large-leaved, semievergreen perennial; a sport of *P.* 'Alice Hindley'. H 2ft (60cm), S 1½ft (45cm). Has creamy-yellow-edged, mid-green leaves. Bears tubular-bell-shaped, lilac-blue, white-throated flowers from midsummer to mid-fall. Z8–10
P. isophyllus illus. p.153.
***P.* Kilimanjaro ('Yajaro').** Vigorous, semievergreen perennial. H 32in (80cm), S 2ft (60cm). Has long, lance-shaped, mid-green leaves. From summer to fall, bears long racemes of purplish-pink flowers, with white throats. Z3–9
***P.* 'King George V'** (illus. p.237). Narrow-leaved perennial. H 2ft (60cm), S 1½ft (45cm). Bears small, tubular to bell-shaped, bright, deep scarlet flowers, with white throats, from midsummer to early or mid-fall. Z9–11
P. kunthii (illus. p.236). Variable, woody-based, willowy perennial. H 3–4ft (90cm–120cm), S 2ft (60cm). Has lance-shaped, toothed, mid-green leaves. From midsummer to late fall, produces many-flowered racemes of red to maroon-red flowers, with white streaks in the throats. Requires a sunny, dry site. Z7–9
***P.* 'Madame Golding'.** Strong-growing, semievergreen perennial. H 30in (75cm), S 16–18in (40–45cm). Similar to *P.* 'Old Candy Pink', but has paler pink flowers. Z8–11
***P.* 'Margery Fish'** (illus. p.236). Almost mat-forming, woody-based perennial. H 2ft (60cm), S 1½ft (45cm). Has narrow, shiny, mid-green leaves. Produces dense spikes of pale blue to violet-mauve flowers, with white penciling in the throats, from summer to fall. Z9–11
***P.* 'Maurice Gibbs'.** Semievergreen perennial. H 2½ft (75cm), S 1½ft (45cm). Has lance-shaped, light green leaves. Bears claret-red flowers, with white throats, from midsummer to early or mid-fall. Z9–11
***P.* 'Modesty'.** Strong-growing, erect, semievergreen perennial. H 3ft (90cm), S 1½ft (45cm). Has lance-shaped, glossy, olive-green leaves. Produces bright red-pink flowers, with white throats sparsely penciled purplish-red, in summer and fall. Z7–10
***P.* 'Mother of Pearl'** (illus. p.236). Narrow-leaved perennial. H to 2½ft (75cm), S 1½ft (45cm). Bears small, tubular to bell-shaped, pearl-mauve flowers, tinted pink and white, with white throats and red lines, from midsummer to early or mid-fall. Z9–11
P. newberryi. Evergreen, mat-forming shrub. H 10in (25cm), S 1ft (30cm). Has small, ovate, leathery, dark green leaves. Bears short sprays of tubular, lipped, deep rose-pink flowers in early summer. Trim back after flowering. Good for a rock garden. Z6–9. **f. *humilior*** illus. p.340.
***P.* 'Old Candy Pink'**, syn. *P.* 'Candy Pink'. Strong-growing, semievergreen perennial. H 30in (75cm), S 16–18in (40–45cm). Has lance-shaped, mid-green leaves. Produces bright crimson flowers, with darker crimson lines in the white throats and small, rounded, white patches at the bases of each lobe, from early summer to mid-fall. Z8–10
***P.* 'Osprey'** (illus. p.236). Vigorous, open-branched, semievergreen perennial. H 2ft (60cm), S 20in (50cm). Has lance-shaped to

ovate, mid-green leaves. Bears creamy-white flowers, with spreading, purplish-pink lobes and white throats, from midsummer to early fall. As the flowers age, the pink coloration deepens and extends into the flower tubes. Z9–11
***P.* 'Papal Purple'** (illus. p.237). Mound-forming, semievergreen perennial. H 20in (50cm), S 14in (35cm). Has narrowly lance-shaped, mid-green leaves. In summer, bears small, rather rounded, white-throated, lilac-purple flowers. Z6–9
***P.* 'Pennington Gem'.** Vigorous, semievergreen perennial. H to 2½ft (75cm), S 1½ft (45cm). Has narrow, fresh green leaves. Bears sprays of tubular, pink flowers from midsummer to fall. Z9–11
***P.* 'Pensham Just Jayne'** (illus. p.237). Robust, bushy, semievergreen perennial. H 3ft (90cm), S 1½ft (45cm). Has lance-shaped to ovate, deep green leaves. Produces rich, deep cerise-pink flowers, with faintly white-lined, magenta throats, from early summer to fall. Z9–11
***P.* 'Pensham Victoria Plum'.** Robust, semievergreen perennial. H 20in (50cm), S 1½ft (45cm). Has narrowly lance-shaped, bright green leaves. In summer, produces spikes of bright blue-purple flowers with burgundy-purple-marked, white throats. Z8–10
***P.* 'Pershore Fanfare'.** Vigorous, semi-evergreen perennial. H 3ft (90cm), S 1½ft (45cm). Has lance-shaped, mid-green leaves. In summer, bears racemes of large, tubular, lavender-blue flowers, each with a white throat striped in darker purple. Z8–10
P. pinifolius illus. p.340. **'Mersea Yellow'** is an evergreen, bushy subshrub. H 4–8in (10–20cm), S 10in (25cm). Produces branched stems clothed in fine, dark green leaves. In summer, very narrow, tubular, bright deep yellow flowers open in loose, terminal spikes. (borderline) Z8–10.
'Wisley Flame' has bright orange-red flowers.
***P.* 'Port Wine'** (illus. p.237). Vigorous, upright, semievergreen perennial. H 3ft (90cm), S 2ft (60cm). Has lance-shaped to ovate, mid- to dark green leaves. Produces deep claret to deep purple flowers, with white throats heavily penciled deep claret, from early summer to fall. Z9–11
P. procerus. Upright, semievergreen perennial. H 20in (50cm), S 8in (20cm). Leaves are oblong to lance-shaped. Bears slim spikes of funnel-shaped, blue-purple flowers in summer. Suitable for a rock garden. Z4–7. **'Roy Davidson'**, H to 4–6in (10–15cm), is compact, with white-lipped, pink flowers.
P. pulchellus. See *P. campanulatus*.
***P.* 'Purple and White'.** See *P.* 'Countess of Dalkeith'.
***P.* 'Raven'** (illus. p.237). Strong-growing, erect, semievergreen perennial. H 3½ft (1.1m), S 18–20in (45–50cm). Has lance-shaped to ovate, mid- to dark green leaves. Dark purple-red flowers, with white throats penciled faint, dark red in the tubes, coalescing into patches of blackish-purple-red at the lobe bases, are borne freely in summer and fall. Z9–11
***P.* 'Red Emperor'.** Robust, erect, semi-evergreen perennial. H 3ft (90cm), S 18–20in (45–50cm). Has lance-shaped to ovate, mid-green leaves. Produces vivid, bright scarlet flowers, with a golden sheen and white throats streaked and suffused red, in summer and fall. Z8–10
***P.* 'Rich Ruby'.** Strong-growing, erect, semievergreen perennial. H 3ft (90cm), S 2ft (60cm). Red-purple stems bear lance-shaped to ovate, dark green leaves. From summer to fall, produces large, rich, dark red-purple blooms, with white throats heavily streaked and suffused dark red, coalescing into a dark brown-purple patch at the mouth of each flower tube. Z9–11
***P.* 'Royal White'.** See *P.* 'White Bedder'.
***P.* 'Rubicundus'** (illus. p.237). Erect, semievergreen perennial. H 3ft (1m), S 2ft (60cm). Leaves are linear and light green. Bears very large, bright red flowers, each with a white throat. Z8–10
P. rupicola. Evergreen, prostrate shrub. H 4in (10cm), S 1½ft (45cm). Has rounded to ovate, fleshy, blue-gray leaves. In summer, bears variable, funnel-shaped, pale to deep pink flowers. Best in a rock garden. Z5–9
***P.* 'Russian River'** (illus. p.237). Vigorous, stout, erect, semievergreen perennial. H 28in (70cm), S 16in (40cm). Purplish stems bear mid-green, lance-shaped leaves. In summer, produces racemes of tubular, plum-purple flowers, each with a lavender-purple throat lined with darker markings. Z7–9
***P.* 'Schoenholzeri'**, syn. *P.* 'Firebird' (illus. p.237). Vigorous, semievergreen, upright perennial. H 2½ft (75cm), S 2ft (60cm). Produces racemes of trumpet-shaped, brilliant scarlet flowers from mid-summer to fall. Lance-shaped to narrowly ovate leaves are mid-green. Z7–10
P. scouleri. See *P. fruticosus* var. *scouleri*.
P. serrulatus, syn. *P. diffusus*, illus. p.341.
***P.* 'Six Hills'.** Evergreen, prostrate shrub. H 6in (15cm), S 8in (20cm). Has rounded, fleshy, gray-green leaves. In summer, bears funnel-shaped, cool lilac flowers at stem tips. Suitable for a rock garden. Z4–8
***P.* 'Snow Storm'.** See *P.* 'White Bedder'.
***P.* 'Sour Grapes'** (illus. p.237). Semievergreen perennial. H 2ft (60cm), S 1½ft (45cm). Light green leaves are narrowly lance-shaped. Bears deep purple-blue flowers suffused violet, from midsummer to early or mid-fall. Z7–10
***P.* 'Southgate Gem'.** Vigorous, semi-evergreen perennial. H 2½ft (75cm), S 1½ft (45cm). Has lance-shaped, dark green leaves. Produces an abundance of bright rose-red flowers, with white throats sparsely penciled crimson, in summer and fall. Z7–10
***P.* 'Stapleford Gem'** (illus. p.236). Large-leaved, semievergreen perennial. H to 2ft (60cm), S 1½ft (45cm). Bears large, tubular to bell-shaped, lilac-purple flowers from midsummer to early or mid-fall; upper lips are pale pink-lilac; lower lips and throats are white with purple lines. Leaves are linear to lance-shaped and mid-green. (borderline) Z7–10
***P.* Stromboli ('Yaboli')** (illus. p.236). Vigorous, semievergreen perennial. H 2–3ft (60–90cm), S 1½–2ft (45–60cm). Produces pale creamy-white flowers, with purplish-pink lobes and faintly purple-pink-streaked, white throats, in summer and fall. Mid-green leaves are lance-shaped to ovate. Z9–11
***P.* 'The Juggler'** (illus. p.236). Erect, semievergreen perennial. H 3½ft (1.1m), S 1½–2ft (45–60cm). Produces white-throated, magenta flowers in summer and fall. Z4–9
***P.* 'Torquay Gem'.** Semievergreen, woody-based perennial. H 2ft (60cm), S 12–16in (30–40cm). Has light green, long, lance-shaped leaves. Bears deep rose-red flowers, with a few carmine lines in the white throats, in summer and fall. Z7–10
P. whippleanus (illus. p.237). Erect, semievergreen, basal-rosetted perennial. H 2ft (60cm), S 1ft (30cm). Has rounded basal leaves and slender stems bearing lance-shaped, glossy, pale green leaves. In summer, bears clusters of pendent, tubular, dark purple flowers, with cream-marked throats, on the flower spike. Z4–8
***P.* 'White Bedder'**, syn. *P.* 'Burford White', *P.* 'Royal White', *P.* 'Snow Storm' (illus p.236). Semievergreen, free-flowering perennial. H 2ft (60cm), S 1½ft (45cm). Has white flowers with dark anthers, and linear, fresh green leaves. Z9–11

PENTACHONDRA

ERICACEAE/EPACRIDACEAE

Genus of evergreen, spreading shrubs with heathlike leaves. Frost hardy. Needs full light and gritty, moist, peaty soil. Difficult to grow, especially in hot, dry areas. Propagate by rooted offsets in spring, by semiripe cuttings in summer, or by seed in fall.
P. pumila. Evergreen, mat-forming, dense shrub. H 3in (8cm), S 1ft (30cm). Has oblong to narrowly ovate, purplish-green leaves. Small, tubular, white flowers, with reflexed lobes, open in early summer, followed, although rarely in cultivation, by small, spherical, orange fruits. Z9–11

Pentapterygium. See *Agapetes*.

PENTAS

RUBIACEAE

Genus of mainly evergreen perennials, biennials, and shrubs, grown for their flowers. Frost tender. Needs full light or partial shade and fertile, well-drained soil. Water freely in full growth, moderately at other times. May be hard pruned in winter. Propagate by softwood cuttings in summer or by seed in spring. Prone to whitefly.
P. carnea. See *P. lanceolata*.
P. lanceolata, syn. *P. carnea* (Egyptian star, Star cluster), illus. p.300.

PEPEROMIA

PIPERACEAE

Genus of evergreen, sometimes succulent, perennials, grown for their foliage. Frost tender. Grow in full light or partial shade. Do not overwater. Propagate by division, by seed, or by leaf or stem cuttings in spring or summer.
P. argyreia, syn. *P. sandersii* (Watermelon plant). Evergreen, bushy, compact perennial. H 8in (20cm), S 6in (15cm). Red-stalked, heart-shaped, fleshy, dark green leaves, to 4in (10cm) or more long, are striped with broad bands of silver. Flowers are insignificant. Z11–12 (min. 50°F/10°C)
P. caperata (Emerald ripple) illus. p.465.
P. clusiifolia (Baby rubber plant). Evergreen perennial with branching, sometimes prostrate, reddish-green stems. H to 8in (20cm), S 10in (25cm). Narrowly ovate, fleshy leaves, 3–6in (8–15cm) long, are dark green, edged with red. Flowers are insignificant. Z11–12 (min. 50°F/10°C).
'Variegata' has leaves with cream and red margins.
P. dolabriformis (Prayer peperomia). Robust, erect perennial, becoming woody with age. H to 10in (25cm), S 8in (20cm). Has succulent, purse-shaped, bright green leaves, the 2 halves of each leaf folded upward and fused along the dark green margins. Leafy stems bear small spikes of white flowers. Z11–12 (min. 50°F/10°C)
P. glabella (Wax privet) illus. p.474.
P. griseoargentea, syn. *P. hederifolia* (Ivy-leaf peperomia), illus. p.474.
P. hederifolia. See *P. griseoargentea*.
P. magnoliifolia. See *P. obtusifolia*.
P. metallica. Evergreen perennial with erect, branching, reddish-green stems. H and S to 6in (15cm). Elliptic, dark green leaves, to 1in (2.5cm) long, have a metallic sheen, and wide, pale midribs above, reddish-green veins below. Flowers are insignificant. Z11–12 (min. 50°F/10°C)
P. nummulariifolia. See *P. rotundifolia*.
P. obtusifolia, syn. *P. magnoliifolia* (Pepper face). Evergreen, upright then spreading perennial with leathery, dull green leaves. H and S 10in (25cm). Bears spikes of white flowers. Z11–12 (min. 50°F/10°C). **'Green and Gold'** has green leaves with golden-yellow margins.
'Variegata' illus. p.474.
P. rotundifolia, syn. *P. nummulariifolia* (Creeping buttons). Evergreen, creeping perennial. H 1¼in (3cm), S to 10in (25cm). Very slender stems produce tiny, rounded, fleshy, bright green leaves, 1cm (½in) wide. Flowers are insignificant. Useful for a hanging basket. Z11–12 (min. 50°F/10°C)
P. rubella. Evergreen perennial with branching, red stems. H to 8in (20cm), S 10in (25cm). Leaves, in whorls of 4 or 5, are around ½in (1cm) long, narrowly ovate, fleshy and pale to dark green above, with paler veins, crimson below. Flowers are insignificant. Z11–12 (min. 50°F/10°C)
P. sandersii. See *P. argyreia*.
P. scandens. Evergreen, climbing or trailing perennial with pinkish-green stems. H to 8in (20cm), S to 20in (50cm). Heart-shaped, fleshy leaves, to 2in (5cm) or more long, are waxy and bright green. Flowers are insignificant. Z11–12 (min. 50°F/10°C)

PERESKIA

CACTACEAE

Genus of deciduous cacti, some of which are climbing, with fleshy leaves and woody stems. Considered the most primitive genus of the Cactaceae, producing true leaves unlike most members of the family. Frost tender. Needs sun and well-drained soil. Water moderately in summer. Propagate by stem cuttings in spring or summer.
P. aculeata (Barbados gooseberry, Lemon vine) illus. p.479. **'Godseffiana'** (syn. *P.a.* var. *godseffiana*) is a fast-growing, deciduous, erect, then climbing cactus. H 6–10ft (2–3m), S 3ft (1m). Broadly ovate, slightly fleshy, orange-brown leaves, usually purplish beneath and 3½in (9cm) long, mature to glossy green. Short flower stems, bearing roselike, single, orange-centered, cream flowers, 2in (5cm) across,

are borne in fall only on plants over 3ft (1m) high. Cut back hard to main stems in fall. Z12 (min. 59˚F/15˚C)
P. grandifolia, syn. *Rhodocactus grandifolius* (Rose cactus), illus. p.485.

PERICALLIS

ASTERACEAE/COMPOSITAE

Genus of perennials and subshrubs, sometimes grown as annuals, especially for their daisylike flower heads. Often known as cinerarias. Frost tender. Requires sun or partial shade and fertile, well-drained soil. Propagate by seed sown from spring to midsummer.
P.* x *hybrida, syn. *Cineraria cruentus* of gardens, *C.* x *hybridus*, *Senecio cruentus, S.* x *hybridus* (Florist's cineraria). H 18–24in (45–60cm), S 10–24in (25–60cm). Slow-growing, evergreen, mound- or dome-shaped perennial. Cultivars are grown as biennials. All have ovate, serrated, mid- to deep green leaves. Large, daisylike, single, semidouble or double flower heads, in shades of blue, red, pink or white, sometimes bicolored, are borne in winter or spring. Z10–12 (min. 45˚F/7˚C).
Jester Series cultivars, H and S 8–10in (20–25cm), are compact, with flower heads in shades of blue, pink, scarlet, crimson, and carmine-red, sometimes with white eyes. **Senetti Series** cultivars bear blue, violet, or magenta flower heads, including some bicolors; tolerant of low temperatures.
Senetti Series Senetti Blue Bicolor ('Sunseneribuba') illus. p.314.

PERILLA

LAMIACEAE/LABIATAE

Genus of annuals, grown for their aromatic foliage, often variegated or flushed red or bronze. Frost hardy. Grow in sun and in fertile, well-drained soil. Pinch out growing tips of young plants to encourage a bushy habit. Propagate by seed sown under glass in early spring.
P. frutescens. Vigorous, upright, bushy, hairy annual. H to 3ft (1m), S to 1ft (30cm). Has broadly ovate, pointed, serrated, aromatic, mid-green leaves, sometimes flecked purple. In summer, bears spikes of tiny, tubular, white flowers. Z9–11
***P.* 'Magilla Vanilla'** illus. p.318.

PERIPLOCA

APOCYNACEAE/ASCLEPIADACEAE

Genus of deciduous or evergreen shrubs and twining climbers, grown for their attractive leaves. Stems exude milky juice if cut. Frost hardy. Grow in sun and in any well-drained soil. Propagate by seed in spring or by semiripe cuttings in summer. ⓘ The fruits and sap may cause stomach upset if ingested.
P. graeca (Silk vine). Deciduous, twining climber. H to 28ft (9m). Ovate, glossy leaves are 1–2in (2.5–5cm) long. In summer, has clusters of 8–12 greenish-yellow flowers, purplish-brown inside, each with 5 lobes. Pairs of narrowly cylindrical seed pods, 5in (12cm) long, contain winged, tufted seeds. Scent of the flowers is thought by some to be unpleasant. Good for training on a pergola, trellis, or wires against a wall. Z9–11

PERISTROPHE

ACANTHACEAE

Genus of mainly evergreen perennials and subshrubs, grown usually for their flowers. Frost tender. Grow in a sunny or partially shaded position and in well-drained soil; do not overwater plants in winter. Propagate by stem cuttings in spring or summer.
P. angustifolia. See *P. hyssopifolia*.

P. hyssopifolia, syn. *P. angustifolia*. Evergreen, bushy perennial. H to 2ft (60cm), S 3–4ft (1–1.2m). Broadly lance-shaped leaves, with long-pointed tips, are 3in (8cm) long. Small clusters of tubular, deep rose-pink flowers open in winter. Z11–12 (min. 50˚F/10˚C).
'Aureovariegata' illus. p.476.

Pernettya. See *Gaultheria*.

PEROVSKIA

LAMIACEAE/LABIATAE

Genus of deciduous subshrubs, grown for their aromatic, gray-green foliage and blue flowers. Fully hardy. Requires a position in full sun and very well-drained soil. Cut plants back hard, almost to base, in spring, as new growth starts. Propagate by softwood cuttings in late spring.
P. atriplicifolia. Deciduous, upright subshrub. H 4ft (1.2m), S 3ft (1m). Gray-white stems bear narrowly ovate, coarsely toothed leaves. Produces 2-lipped, violet-blue flowers in long, slender spikes from late summer to mid-fall. H5
***P.* 'Blue Spire'** illus. p.159.

PERSICARIA

syn. ACONOGONON, BISTORTA, TOVARA
notweed

POLYGONACEAE

Genus of annuals, sometimes invasive perennials and rarely evergreen, semievergreen, or deciduous subshrubs. Grown for their attractive fall leaf color and their spikes or panicles of small, usually long-lasting, white, pink, or red flowers. Fully hardy to half hardy. Requires sun or partial shade and moist soil. Propagate by seed in spring; divide perennials in spring or fall. ⓘ Contact with all parts may irritate skin; the sap may cause mild stomach upset if ingested.
P. alpina, syn. *P. polymorpha* (illus. p.234). Clump-forming, leafy perennial. H and S 6ft (2m) or more. Stout, branching stems bear large, elliptic- to lance-shaped, mid-green leaves. In midsummer, produces frothy, heads of tiny, long-lasting, creamy-white flowers at stem tips. Z3–8
P. affinis, syn. *Polygonum affine*. Mat-forming, evergreen perennial. H to 10in (25cm), S 2ft (60cm) or more. Stout stems bear small, lance-shaped, glossy, green leaves that turn red-bronze in winter. From midsummer to mid-fall, produces dense spikes of small, funnel-shaped, rose-red flowers, fading to pale pink. Good on a bank or in a rock garden. Z3–8. **'Darjeeling Red'**, S 20in (50cm), has long spikes of deep red flowers.
'Donald Lowndes' illus. p.365.
'Superba' (illus. p.234) is vigorous and has pale pink flowers, becoming deep pinkish-red, with red sepals; leaves turn rich brown in fall.
P. amplexicaulis, syn. *Bistorta amplexicaulis, Polygonum amplexicaule*. Clump-forming, leafy perennial. H and S 4ft (1.2m). Has ovate to heart-shaped, mid-green leaves. Bears profuse spikes of small, rich red flowers from midsummer to early fall. Z4–7. **'Alba'**, H 3ft (90cm), S 48in (120cm), has showy spikes of white flowers. **'Blotau'** see *P.a.* Taurus.
'Firetail' (illus. p.234), H to 3–4ft (1–1.2m), S to 2ft (60cm), bears slender spikes of bright red flowers above heart-shaped leaves. **Taurus ('Blotau')**, H to 32in (80cm), S to 3ft (100cm), bears bright crimson-red flowers; is reputed to spread less than many other selections.
P. bistorta, syn. *Polygonum bistorta* (Bistort). **'Superba'** (illus. p.234) is a vigorous, clump-forming, semievergreen perennial. H to 3ft (90cm), S to 2ft (60cm). Produces spikes of soft pink flowers above ovate leaves in summer. Z4–7
P. campanulata, syn. *Polygonum campanulatum* (illus. p.234). Compact, mat-forming perennial. H and S 3ft (90cm). Has ovate leaves, brown-felted beneath. Bears branching heads of bell-shaped, pink or white flowers from midsummer to early fall. Z5–8. **'Rosenrot'** (illus. p.234), H 4ft (1.2m), S 3ft (1m), has reddish-pink flowers in summer.
P. capitata, syn. *Polygonum capitatum*. Compact, spreading perennial. H 3in (8cm), S 20in (50cm). Small, ovate leaves are green with darker marks. Small, round heads of pink flowers are borne in summer. Suitable for a rock garden or bank. Z9–11
P. macrophylla, syn. *Polygonum macrophyllum, Polygonum sphaerostachyum*, illus. p.265.
P. microcephala. Spreading, leafy, rhizomatous perennial. H to 2ft (60cm), S 3ft (1m) or more. Has lance-shaped, reddish-green leaves with darker zonal markings. Branching stems bear small, rounded heads of minute, white flowers in summer. Z6–8. **'Red Dragon'** (syn. *P.* 'Red Dragon'; illus. p.234), H to 4½ft (1.3m), has deep red leaves, each marked with a silvery chevron. Leaves develop greenish tints as they age.
P. polymorpha. See *P. alpina*.
P. milletii, syn. *Polygonum milletii*. Compact, semievergreen perennial. H and S 2ft (60cm). Narrow, lance-shaped leaves are mid-green. Produces slender spikes of rich crimson flowers from midsummer to early fall. Z8–11
***P.* 'Red Dragon'.** See *P. microcephala* 'Red Dragon'.
P. vacciniifolia, syn. *Polygonum vacciniifolium*, illus. p.373.
P. virginiana, syn. *Polygonum virginianum, Tovara virginiana*. Rather variable, clump-forming perennial. H to 4ft (1.2m), S 2– 4½ft (60–140cm). Ovate, pale green leaves have brownish-mauve blotches, brightest in spring. In late summer and early fall, bears spikes of tiny, green flowers. Z4–8. **'Batwings'**, H and S to 32in (80cm), has narrrowly ovate leaves with a dark red chevron mark. **var. *filiformis* 'Lance Corporal'** (illus. p.234), H and S to 32in (80cm), has a rich brown chevron mark on each leaf.
'Painter's Palette' (illus. p.234) has green leaves with central, brown zones, ivory-yellow splashes and stripes, and an overall deep pink tinge. Seldom flowers in cultivation.

PETASITES

Butterbur

ASTERACEAE/COMPOSITAE

Genus of rhizomatous perennials, grown for their usually large leaves and value as groundcover. Good for a wild garden or beside a stream or pool; can be invasive. Fully hardy to frost hardy. Tolerates sun or shade; prefers moist but well-drained soil. Propagate by division in spring or fall.
P. fragrans (Winter heliotrope). Spreading perennial. H to 1ft (30cm), S 5ft (1.5). Has basal, kidney-shaped, toothed, dark green leaves, on stalks to 1ft (30cm) long. Small, vanilla-scented, daisylike, pinkish-white flower heads are produced in late winter before foliage. Z8–10
P. japonicus. Spreading perennial. H 3½ft (1.1m), S 5ft (1.5). Has large, kidney-shaped, toothed, light green, basal leaves on stalks 3ft (1m) long. In early spring, bears dense cones of small, daisylike, yellowish-white flowers before leaves emerge. Z5–9

x PETCHOA

SOLANACEAE

Hybrids of *Calibrachoa* and *Petunia,* sometimes called calitunias. Trailing, free-flowering perennials, grown as annuals for their flowers in many colors. Frost tender. Requires full sun; grow as for *Petunia*. Good as summer bedding, and in hanging baskets and containers. Propagate by cuttings; does not set seed.
x *P.* SuperCal Series SuperCal Neon Rose ('Kakegawa S89') illus. p.303.
x *P.* 'Kakegawa S89'. See x *P.* SuperCal Series SuperCal Neon Rose.

PETREA

VERBENACEAE

Genus of deciduous or semievergreen small trees, shrubs, and woody-stemmed, twining climbers, grown for their flowers. Frost tender. Needs full light and fertile, well-drained soil. Water regularly, less when not in full growth. Provide support. Thin out and spur back crowded growth in spring. Propagate by semiripe cuttings in summer. Mealy bug and whitefly may cause problems.
P. volubilis (Purple wreath, Queen's wreath) illus. p.463.

PETROCOSMEA

GESNERIACEAE

Genus of evergreen, rhizomatous perennials. Frost tender. Needs shade and well-drained, peaty soil. Propagate by seed in early spring or by leaf cuttings in early summer.
P. kerrii illus. p.361.

Petrophyton. See *Petrophytum*.

PETROPHYTUM

SYN. PETROPHYTON

Rock spiraea

ROSACEAE

Genus of evergreen, summer-flowering subshrubs, grown for their spikes of small, fluffy flowers. Good for growing on tufa or in alpine houses. Fully hardy. Needs sun and gritty, very well-drained, alkaline soil. May be difficult to grow. Propagate by softwood or semiripe cuttings in summer or by seed in fall. In hot weather, red spider mite and aphids may be a problem.

P. caespitosum. Evergreen, mat-forming subshrub. H 2in (5cm), S 1ft (30cm). Has clusters of small, spoon-shaped, silky-hairy, bluish-green leaves. Flower stems, ¾in (2cm) long, each bear a conical spike of small, fluffy, white flowers, with prominent stamens, in summer. Z5–9

P. hendersonii. Evergreen, mound-forming subshrub. H 4in (10cm), S 8in (20cm). Has branched stems covered in hairy, rounded, blue-green leaves. Conical spikes of small, cup-shaped, fluffy, white to creamy flowers are produced on 1in (2.5cm) stems in summer. Z5–8

PETRORHAGIA

CARYOPHYLLACEAE

Genus of annuals and perennials, grown for their flowers. Suitable for banks and rock gardens. Frost hardy. Prefers sun and well-drained, sandy soil. Propagate by seed in fall. Self-seeds readily.

P. saxifraga, syn. *Tunica saxifraga* (Tunic flower), illus. p.361. **'Rosette'** is a compact, mat-forming perennial. H 4in (10cm), S 6in (15cm). Has tufts of grasslike leaves. In summer, slender stems bear a profusion of cup-shaped, double, pale pink flowers, sometimes veined deeper pink. Z5–7

Petrosedum. See *Sedum*.

PETTERIA

PAPILIONACEAE/LEGUMINOSAE

Genus of one species of deciduous shrub, grown for its flowers. Related to *Laburnum,* differing in its erect racemes. Fully hardy. Requires full sun and fertile, well-drained soil. Propagate by softwood cuttings in summer or by seed in fall. ⓘ The seeds may cause stomach upset if ingested.

P. ramentacea (Dalmatian laburnum). Deciduous, upright shrub. H 6ft (2m), S 3ft (1m). Mid-green leaves each have 3 ovate leaflets. Has dense, upright spikes of fragrant, laburnumlike, yellow flowers in late spring and early summer. Z7–10

PETUNIA

SOLANACEAE

Genus of annuals and perennials, always grown as annuals, with showy, colorful flowers. Half hardy. Grow in a sunny site, sheltered from wind, in fertile, well-drained soil. Deadhead regularly. Propagate by seed sown under glass in fall or mid-spring. May suffer from viruses, including cucumber mosaic and tomato spotted wilt.

The many cultivars that have been produced are moderately fast-growing, branching, bushy plants, H 6–12in (15–30cm), S 1ft (30cm), with ovate, mid- to deep green leaves, usually 2–5in (5–12cm) long. From late spring to late fall, they produce flared, trumpet-shaped, single or double flowers in a wide range of colors (available in mixtures or singly), including blue, violet, purple, red, pink, and white. Some have dark veining, central white stars, halos (throats in contrasting colors), or picotee margins.

The cultivars mostly fall into Grandiflora and Multiflora groups; other groups include Floribunda, Milliflora, and Spreading petunias:

Floribunda petunias are crosses between Grandiflora and Multiflora types.

Grandiflora petunias have very large flowers, 3–4in (8–10cm) across, but they are easily damaged by rain and are best grown in sheltered hanging baskets and pots.

Milliflora petunias are dwarf, arising from a genetic mutation, with flowers around 1½in (4cm) across.

Multiflora petunias are bushier than the Grandiflora petunias, and produce smaller flowers, 2in (5cm) across, in greater quantity. They tend to be more resistant to rain damage, and are excellent for summer bedding or for a mixed border.

Spreading petunias are low-growing, with trailing stems and flowers 2–3in (5-8cm) across. They are suitable for groundcover.

***P.* Double Duo Series.** Compact, early-flowering, branching, Multiflora petunias. H and S 10–16in (25–40cm). Bear double, sometimes semidouble, flowers that are pink, salmon- or lavender-pink, burgundy-red, blue, or bicolored red-and-white or rose-pink and white. Z10–11

***P.* Double Pirouette Series.** Compact, strongly branching, Grandiflora petunias. H and S 10–16in (25–40cm). Double flowers may be blue, burgundy-red, pink, or bicolored purple and white, red and white, or rose-pink and white. Z10–11. **'Orchid Mist'** has flowers combining shades of pale pink; is weather resistant.

***P.* Duo Series.** Multiflora petunias. H to 1ft (30cm), S 1–3ft (30–90cm). Produce double flowers in colors including pink, lavender-pink, red, and burgundy, some with dark veining and some bicolors. Tolerate wet weather, but are best in containers or under glass. Z10–11

***P.* Easy Wave Series.** Spreading, early-flowering, Multiflora petunias. H 10in (25cm), S to 2ft (60cm). Bears flowers in a wide color range that includes shell-pink, coral-orange, bright burgundy-red, and plum-purple. More mounding than Wave Series cultivars. Z10–11. **'Mystic Pink'** illus. p.303.

***P.* Express Series.** Compact, mound-forming, Grandiflora petunias. H to 1ft (30cm), S 1–3ft (30–90cm). Trailing stems bear flowers in many hues, including pure white, red, shades of pink, and blue; some are picotees or marked with contrasting "stars." Are weather resistant. Z10–11

***P.* Frenzy Series.** Vigorous Grandiflora petunias. H 10in (25cm), S 1ft (30cm). Produce flowers in a wide color range that includes white, pink, blue, and red; flowers are sometimes veined, with "stars," "halos," or picotee margins. Weather resistant. Z10–11. **'Blue Vein'** illus. p.312.

***P.* Picobella Series.** Compact, vigorous, spreading Milliflora petunias. H 6–10in (15–25cm), S to 1ft (30cm). Produces flowers in colors including white, rose-pink, carmine-red, light lavender-blue, and blue. Weather resistant. Z10–11

***P.* Shock Wave Series.** Mound-forming, spreading, semitrailing Multiflora petunias. H 8–10in (20–25cm), S 2–3ft (60–90cm). Bear prolific, single flowers in ivory, pink shades, pink with dark veins, purple, or rose. Z10–11. **'Denim'** illus. p.311.

***P.* Sophistica Series.** Grandiflora petunias. H and S 10–15in (25–38cm). Bear pink, blue, lime-green, or dark reddish-burgundy flowers. Z10–11. Flowers of **'Antique Shades'** combine pale pink and cream. **'Lime Bicolor'** has irregularly splashed, lime-green and pink flowers and is good in containers.

***P.* 'Stars and Stripes'.** Compact, Grandiflora petunia. H and S 10–12in (25–30cm). Produces blue, crimson, red, or rose-pink flowers, each petal marked centrally with a bold, white stripe. Z10–11

***P.* Surfinia Series.** Strongly trailing petunias. H 9–16in (23–40cm), S 1–3ft (30–90cm). More vigorous and branching than many other petunias, freely bearing Grandiflora- and Multiflora-sized flowers in over 50 colors and forms, some double and some with veins. They tolerate wet weather well; are ideal for hanging baskets and window boxes. Available only as young plants, propagated by softwood cuttings. Z10–11. **Surfinia Blue Vein ('Sunsolos')** illus. p.311. **Surfinia Lime ('Keiyeul')** illus. p.316. **'Surfinia Purple'** is a vigorous Grandiflora petunia, bearing abundant, magenta flowers with purple veining. **'Surfinia White'** has pure white flowers with dark throats.

***P.* Tidal Wave Series.** Spreading, dense-growing, seed-raised Multiflora petunias. H 8–10in (20–25cm), S to 3ft (90cm). Bear purple-pink, bright pink, silver-pink, or cherry-red flowers, some with darker centers. Are weather resistant and suitable for groundcover. Z10–11

***P.* Wave Series.** Floribunda petunias with trailing stems. H 4–6in (10–15cm), S 36–42in (90–110cm) or more. Single flowers may be white, pink, lavender-pink, pale lilac-blue, deep blue, and purple, sometimes with contrasting centers or darker veining. Excellent for temporary groundcover; keep well fertilized for best results. Z10–11

PHACELIA

BORAGINACEAE

Genus of annuals, biennials, and perennials. Fully hardy. Grow in sun and in fertile, well-drained soil. Tall species may need support. Propagate by seed sown outdoors in spring or early fall. ⓘ Contact with foliage may aggravate skin allergies.

P. campanularia (California bluebell) illus. p.314.

P. tanacetifolia. Upright, moderately fast-growing annual. H to 4ft (1.2m), S 1½ft (45cm). Has feathery, deep green leaves. In summer, bears spikes of bell-shaped, lavender-blue flowers. (borderline) Z3–10

PHAEDRANASSA

AMARYLLIDACEAE

Genus of bulbs with tubular, often pendent flowers. Frost tender. Needs full sun or partial shade and fairly rich, well-drained soil. Feed with high-potash fertilizer in summer. Reduce watering in winter. Propagate by seed or offsets in spring.

P. carmiolii illus. p.410.

Phaedranthus buccinatorius. See *Distictis buccinatoria*.

Phaiophleps biflora. See *Olsynium biflorum*.

PHAIUS

ORCHIDACEAE

See also ORCHIDS.

P. tankervilleae (illus. p.467). Semi-evergreen, terrestrial orchid. H 3ft (1m). Leaves are broadly ovate, ribbed and 2ft (60cm) long. Tall spikes of flowers, 3½in (9cm) across, brown within, silvery-gray outside and each with a long, red-marked, pink lip, open in early summer. Provide partial shade in summer. Z11–12 (min. 59˚F/15˚C; max. 86˚F/30˚C)

PHALAENOPSIS

Moth orchid

ORCHIDACEAE

See also ORCHIDS.

***P.* Allegria gx.** Evergreen, epiphytic orchid for a warm greenhouse. H 3ft (1m). Broadly ovate, fleshy leaves are 6in (15cm) long. Bears sprays of white flowers, to 5in (12cm) across; flowering season varies. Needs shade in summer. Z12 (min. 64˚F/18˚C; max. 86˚F/30˚C)

P. cornu-cervi. Evergreen, epiphytic orchid for a warm greenhouse. H 6in (15cm). Has broadly ovate leaves, 4in (10cm) long. Yellowish-green flowers, 2in (5cm) across, with brown marks, are borne successively, either singly or in pairs, in summer. Needs shade in summer. Z12 (min. 64˚F/18˚C; max. 86˚F/30˚C)

***P.* Lady Pink Lips gx** (illus. p.466). Evergreen, epiphytic orchid for a warm greenhouse. H 6in (15cm). Broadly ovate leaves are 4in (10cm) long. Tall, pendent spikes of pink flowers, 3½in (9cm) across, are produced at varying times of year. Requires shade in summer. Z12 (min. 64˚F/18˚C; max. 86˚F/30˚C)

***P.* Lundy gx** (illus. p.467). Evergreen, epiphytic orchid for a warm greenhouse. H 6in (15cm). Broadly ovate leaves are 9in (23cm) long. Has sprays of red-striped, yellow flowers, 3in (8cm) across; flowering season varies. Grow in shade in summer. Z12 (min. 64˚F/18˚C; max. 86˚F/30˚C)

PHALARIS

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.

P. arundinacea* var. *picta, syn. *P.a.* 'Picta' (Gardener's garters). Evergreen, spreading, perennial grass. H to 1.5m (3ft) in flower, S indefinite. Has broad, white-striped leaves and bears narrow panicles of spikelets in summer. Z4–9. **'Feesey'**

(syn. *P.a.* var. *picta* 'Mervyn Feesey') is flushed pink at the stem bases, and has light green leaves with broad white stripes, and panicles with a faint purplish flush. **'Mervyn Feesey'** see *P.a.* var. *picta* 'Feesey'.

Phanerophlebia fortunei. See *Cyrtomium fortunei*.
Pharbitis. See *Ipomoea*.
Phaseolus caracalla. See *Vigna caracalla*.
Phedimus. See *Sedum*.

PHEGOPTERIS

Beech fern

THELYPTERIDACEAE

Genus of deciduous ferns. Fully hardy. Grow in partial shade and in humus-rich, moist but well-drained soil. Propagate by division in spring or by spores in summer.
P. decursive-pinnata. Deciduous fern. H 32in (80cm), S 16in (40cm). Narrowly lance-shaped, pale green fronds, each tapering gradually to a stalk, are produced in tufts. Z5–9

PHELLODENDRON

RUTACEAE

Genus of deciduous trees, grown for their foliage, which colors well in fall. Male and female flowers are produced on different plants. Fully hardy, but young growth is prone to damage by late frosts. Needs full sun and fertile, well-drained soil. Does best in hot summers. Propagate by softwood cuttings in summer, by seed in fall, or by root cuttings in late winter.
P. amurense (Amur cork tree). Deciduous, spreading tree. H 46ft (14m), S 50ft (15m). Has corky, dark bark when old. Aromatic leaves, each with up to 13 oblong leaflets, are glossy, dark green, becoming yellow in fall. Tiny, green flowers in early summer are followed by small, rounded, black fruits. Z3–8
P. chinense illus. p.75.

Phemeranthus sediformis. See *Talinum sediforme*.

PHILADELPHUS

HYDRANGEACEAE

Genus of deciduous, mainly summer-flowering shrubs, grown for their usually fragrant flowers. Fully to frost hardy. Needs sun and fertile, well-drained soil. After flowering, cut some older shoots back to young growths, leaving young shoots to flower the next year. Propagate by softwood cuttings in summer. May become infested with aphids.
***P.* 'Beauclerk'** illus. p.127.
***P.* 'Belle Etoile'** illus. p.128.
P. coronarius (Mock orange).
'Aureus' is a deciduous, upright shrub. H 8ft (2.5m), S 5ft (1.5). Ovate, golden-yellow, young leaves turn yellow-green in summer. Protect from full sun. Clusters of very fragrant, 4-petaled, creamy-white flowers are produced in early summer. Z4–8. **'Variegatus'** illus. p.131.
***P.* 'Dame Blanche'** illus. p.129.
P. delavayi. Deciduous, upright shrub. H 10ft (3m), S 8ft (2.5m). Leaves are dark green, ovate and toothed. Dense clusters of very fragrant, 4-petaled, white flowers, with sometimes purple-flushed, green sepals, open from early to midsummer. Z6–9. ***f. melanocalyx*** illus. p.131.
***f. melanocalyx* 'Nyman's Variety'** has flowers that open flat, thus appearing to be larger.
***P.* 'Innocence'.** Deciduous, upright shrub. H 10ft (3m), S 6ft (2m). Has arching branches and ovate leaves, strongly mottled yellow. In early or midsummer, bears single, sometimes semidouble, cup-shaped, very fragrant white flowers. Z4–8
P.* x *lemoinei. See *P.* 'Lemoinei'.
***P.* 'Lemoinei'**, syn. *P.* x *lemoinei*, illus. p.129.
***P.* 'Manteau d' Hermine'** illus. p.149.
***P.* 'Silberregen'**, syn. *P.* 'Silver Showers'. Deciduous, rounded shrub. H 4ft (1.2m), S 5ft (1.5). Has upright, arching shoots with ovate leaves. Solitary, single, cup-shaped, strawberry-scented, pure white flowers are profusely borne in early summer. Z4–8
***P.* 'Silver Showers'.** See *P.* 'Silberregen'.
***P.* 'Sybille'** illus. p.128.
***P.* 'Virginal'** illus. p.129.
***P.* White Rock ('Pekphil').** Free-flowering, deciduous, upright shrub. H 5ft (1.5), S 6ft (2m). Has ovate, sparsely toothed, dark green leaves on flexible, arching branches. In early summer, bears large, lightly scented, single or semidouble, white flowers; branches are often bowed down with the weight of flowers. Z4–8

x PHILAGERIA

PHILESIACEAE

Hybrid genus (*Philesia* x *Lapageria*) of one evergreen, scrambling or twining shrub. Frost hardy. Grow in partial shade and well-drained, preferably acidic soil. Propagate by layering in late summer or fall.
x *P. veitchii.* Evergreen, scrambling or twining shrub. H 10–12ft (3–4m). Produces oblong, slightly toothed leaves. Nodding, tubular, rose-pink flowers are borne in leaf axils in summer. Z9–11

PHILESIA

PHILESIACEAE

Genus of one species of evergreen shrub, grown for its showy flowers. Frost hardy, but thrives only in mild, moist areas. Needs partial shade and humus-rich, moist, acidic soil. Apply an annual dressing of leaf mold. Propagate by semiripe cuttings in summer or by suckers in fall.
P. magellanica. Evergreen, erect shrub. H 3ft (1m), S 6ft (2m). Narrowly oblong, dark green leaves are bluish-white beneath. Bears trumpet-shaped, waxy, crimson-pink flowers, in leaf axils, from midsummer to late fall. Z7–10

PHILLYREA

OLEACEAE

Genus of evergreen shrubs and trees, with inconspicuous flowers, grown for their foliage. Fully hardy to frost hardy, but in cold areas requires shelter. Prefers full sun and in fertile, well-drained soil. To restrict growth, cut back in spring. Propagate by semiripe cuttings in summer.
P. angustifolia. Evergreen, bushy, dense shrub. H and S 6–10ft (2–3m). Leaves are narrowly oblong and dark green. Small, fragrant, 4-lobed, greenish-white flowers in late spring and early summer are followed by spherical, blue-black fruits. Z7–11
P. decora. See *Osmanthus decorus*.
P. latifolia. Evergreen, rounded shrub or tree. H and S to 30ft (9m). Has ovate, glossy, dark green leaves. Bears tiny, fragrant, 4-lobed, greenish-white flowers from late spring to early summer, then spherical, blue-black fruits. Z7–11

PHILODENDRON

ARACEAE

Genus of often epiphytic, evergreen, sometimes treelike perennials and woody-based root-climbers, grown for their handsome leaves. Intermittently bears insignificant flowers. Frost tender. Needs partial shade and humus-rich, well-drained soil. Water moderately, sparingly in cold weather. Provide support. Young stem tips may be removed to promote branching. Propagate by leaf-bud or stem-tip cuttings in summer. ⓘ All parts may cause severe discomfort if ingested; contact with sap may irritate skin.
P. auritum of gardens. See *Syngonium auritum*.
P. bipinnatifidum, syn. *P. selloum* (Tree philodendron), illus. p.458.
P. domesticum, syn. *P. hastatum* of gardens (Elephant's ear). Evergreen, fairly slow-growing, woody-based, root climber. H 10–20ft (3–6m) Lustrous, bright green leaves, 12–16in (30–40cm) long, are arrow-shaped on young plants and later have prominent, basal lobes. Z12 (min. 59˚F/15˚C)
P. erubescens (Blushing philodendron, Red-leaf philodendron). Evergreen, erect, woody-based, root climber. H 10–20ft (3–6m) Ovate to triangular leaves, 6–10in (15–25cm) long, have long, red stalks and are dark green with a lustrous, coppery flush. Z12 (min. 59˚F/15˚C). **'Burgundy'**, H 6ft (2m) or more, has narrowly oblong, red-flushed, deep green leaves, to 1ft (30cm) long, wine-red beneath.
P. hastatum of gardens. See *P. domesticum*.
P. hederaceum, syn. *P. scandens* (Heart leaf), illus. p.463.
P. laciniatum. See *P. pedatum*.
P. melanochrysum (Black gold philodendron). Robust, fairly slow-growing, evergreen, woody-based, root climber. H 10–20ft (3–6m) Heart-shaped leaves, to 30in (75cm) long, are lustrous, deep olive-green with a coppery sheen and pale veins. Z12 (min. 59˚F/15˚C)
P. pedatum, syn. *P. laciniatum*. Slow-growing, evergreen, woody-based, root climber. H 10–15ft (3–5m). Has ovate, glossy, deep green leaves, 12–32in (30–80cm) long, with 5–7 large lobes. Z12 (min. 59˚F/15˚C)
P. scandens. See *P. hederaceum*.
P. selloum. See *P. bipinnatifidum*.
P. trifoliatum. See *Syngonium auritum*.

PHLEBODIUM

POLYPODIACEAE

Genus of semievergreen ferns growing on trees or rocks. Frost tender. Needs full light or partial shade and humus-rich, moist but well-drained soil. Remove fading fronds regularly. Propagate by division in spring or by spores in summer.
P. aureum, syn. *Polypodium aureum* (Golden polypody), illus. p.479.
P. pseudoaureum, syn. *Polypodium areolatum, Polypodium pseudoaureum*. Evergreen fern. H and S 1–2ft (30–60cm). Has creeping, orange-scaled rhizomes and arching, deeply lobed, glaucous fronds with two rows of orange-yellow sporangia on the reverse of each pinna. Z9–11

PHLOMIS

LAMIACEAE/LABIATAE

Genus of herbaceous, sometimes semievergreen, summer-flowering perennials and evergreen shrubs or subshrubs, grown for their conspicuous, hooded flowers, which are borne in dense whorls, and for their foliage. Fully hardy to frost hardy. Prefers full sun and well-drained soil. Propagate by seed in fall; shrubs by softwood cuttings in summer; perennials by division in spring.
P. cashmeriana. Evergreen, upright perennial. H 3ft (90cm), S 2ft (60cm). Narrowly ovate, mid-green leaves have woolly, white undersides. Bears abundant, 2-lipped, pale lilac flowers in summer. (borderline) Z4–10
P. chrysophylla. Evergreen, rounded, stiffly branched shrub. H and S 3ft (1m). Ovate leaves are gray-green when young, becoming golden-green. Produces 2-lipped, golden-yellow flowers in early summer. Z5–10
P. fruticosa (Jerusalem sage) illus. p.160.
P. italica illus. p.152.
P. longifolia* var. *bailanica. Evergreen, bushy shrub. H 4ft (1.2m), S 6ft (2m). Leaves are broadly ovate, deeply veined and dark green. Produces 2-lipped, deep yellow flowers from early to midsummer. (borderline) Z4–10
P. russeliana illus. p.243.
***P. tuberosa* 'Amazone'.** Deciduous, clump-forming, drought-resistant perennial. H 4–5ft (1.2–1.5m), S 2–3ft (0.6-1m). Produces handsome, dark gray-green, toothed leaves from the basal clump. Strong, reddish-purple, leafy stems bear whorls of hooded, pale-lavender flowers in mid- and late summer. Striking seed heads follow. Good for gravel gardens in full sun. Z5–10

PHLOX

POLEMONIACEAE

Genus of mainly late spring- or summer-flowering, herbaceous or evergreen perennials, and a few shrubs and annuals, grown for their terminal panicles or profusion of brightly colored flowers. Fully to frost hardy. Does best in sun or partial shade and in fertile, moist but well-drained soil; some species prefer acidic soil; in light, dry soils is better grown in partial shade. Trim back rock garden species after flowering. Propagate rock garden species and hybrids by cuttings from non-flowering shoots in spring or summer; species by seed in fall or spring; *P. maculata, P. paniculata* and their cultivars also by division in early spring or by root cuttings in winter; and annuals by seed in spring. *P. maculata, P. paniculata,* and their

cultivars are susceptible to eelworm. See also feature panel p.240.
P. adsurgens. Semievergreen, mat-forming, prostrate perennial. H and S 1ft (30cm). Woody-based stems are clothed in ovate, light to mid-green leaves. In summer, bears terminal clusters of short-stemmed, saucer-shaped, purple, pink or white flowers with overlapping petals. Good for a rock garden or peat bed. Prefers partial shade and gritty, peaty, acidic soil. Z4–6. **'Wagon Wheel'** illus. p.363.
***P. amoena* 'Variegata'.** See *P.* x *procumbens* 'Variegata'.
P. bifida (Sand phlox) illus. p.366.
P. caespitosa. Evergreen, mound-forming, compact perennial. H 3in (8cm), S 5in (12cm). Leaves are narrow and needlelike. Bears solitary, almost stemless, saucer-shaped, lilac or white flowers in summer. Suits a rock garden or trough. Needs sun and very well-drained soil. Z4–8
***P.* 'Camla'** illus. p.365.
***P.* 'Chattahoochee'.** See *P. divaricata* subsp. *laphamii* 'Chattahoochee'.
P. divaricata (Wild sweet William). Semi-evergreen, creeping perennial. H to 14in (35cm), S 20in (50cm). In early summer, upright stems bear saucer-shaped, lavender-blue flowers in loose clusters. Leaves are ovate. Suits a rock garden or peat bed. Prefers partial shade and moist, but well-drained, peaty soil. Z4–8. **subsp. *laphamii*** illus. p.341.
subsp. *laphamii* 'Chattahoochee' (syn. *P.* 'Chattahoochee') illus. p.341.
***P. douglasii* 'Boothman's Variety'** illus. p.366. **'Crackerjack'** illus. p.365. **'Red Admiral'**, H 6in (5cm), S 1ft (30cm), is a vigorous, compact, mound-forming, evergreen perennial. Has dense, stiff, narrowly lance-shaped, small, dark green leaves. In late spring or early summer, bears salverform, crimson flowers, singly or in pairs or threes. Z3–8
P. drummondii (Annual phlox). Erect to spreading, bushy, hairy annual. H 4-18in (10–45cm), S to 10in (25cm) or more. Has very variable, narrow, almost stalkless, stem-clasping leaves. In late spring, bears clusters of star-shaped, hairy, purple, pink, red, white, or lavender-blue flowers, often pale inside, with contrasting marks at the base of the petal lobes. Z2–11. **Popstars Series** are compact, strongly branching annuals. H 10in (25cm), S 14in (35cm). Have lance-shaped, bright green leaves. From summer to early fall, bear a profusion of starlike, wholly white or white-edged, blue, purple, red, or pink flowers, sometimes with white centers. **21st Century Series**, H and S 12–14in (30–35cm), are vigorous and mounding, with white, pink, blue, or scarlet flowers.
***P.* 'Emerald Cushion'.** See *P. subulata* 'Emerald Cushion'.
***P. hoodii*.** Evergreen, compact, prostrate perennial. H 2in (5cm), S 4in (10cm). Solitary, flat, white flowers open in early summer above fine, needlelike, hairy leaves. Suits a rock garden. Needs sun and very well-drained soil. Z3–8
P. maculata (Meadow phlox). Erect perennial. H 3ft (1m), S 1½ft (45cm). In early and midsummer, bears cylindrical spikes of tubular, 5-lobed, pink, violet or white flowers above ovate, mid-green leaves. Z4–8. **'Alpha'** has lilac-pink flowers. **'Omega'** has white flowers, each with a lilac-red eye.
***P. paniculata*.** Upright perennial, seldom grown, as is replaced in gardens by its more colorful cultivars. H 4ft (1.2m), S 2–3ft (60–100cm). From summer to early or mid-fall, bears tubular, 5-lobed flowers in conical heads above ovate, mid-green leaves. Z4–8. **'Aida'** is purple-red, each flower with a purple eye. Flowers of **'Amethyst'** (illus. p.240) are pale lilac with paler-edged petals. **'Balmoral'** has large, rosy-mauve flowers. **'Brigadier'** (illus. p.240) has deep orange-red flowers. **'Bright Eyes'** has pale pink flowers, each with a red eye. **'Eva Cullum'** (illus. p.240) has clear pink flowers with magenta eyes. **'Eventide'** bears lavender-blue flowers. **'Fujiyama'** see *P.p.* 'Mount Fuji'. Flowers of **'Graf Zeppelin'** (illus. p.240) are white with red centers. **'Hampton Court'** (illus. p.240) is a mauve-blue cultivar, with dark green foliage. **'Harlequin'** has leaves edged in ivory-white and reddish-purple flowers. **'Junior Bouquet'** has deep pink flowers with prominent white eyes. **'Le Mahdi'** has deep purple flowers. **'Lilac Time'**, H 2ft (60cm), is sometimes confused with *P.p.* 'Amethyst' and has lilac-blue flowers. **'Mia Ruys'** (illus. p.240), H 2ft (60cm), has large, white flowers. **'Mother of Pearl'** has white flowers tinted pink. **'Mount Fuji'** (syn. *P.p.* 'Fujiyama') illus. p.230. **'Norah Leigh'** (illus. p.240) has pale lilac flowers and ivory-variegated leaves. **'Orange Perfection'** see *P.p.* 'Prince of Orange'. **'Prince of Orange'** (syn. *P.p.* 'Orange Perfection') illus. p.235. **'Sandringham'** has pink flowers with darker centers and widely spaced petals. Flowers of **'White Admiral'**, H 3ft (90cm), are pure white. **'Windsor'** (illus. p.240) has carmine-rose flowers with red eyes.
***P.* x *procumbens* 'Millstream'.** Semi-evergreen, prostrate perennial. H to 6in (15cm), S 1ft (30cm). Has narrowly ovate, glossy, green leaves. In early summer, bears small, saucer-shaped, white-eyed, deep lavender-pink flowers. Suitable for a rock garden. Z5–9. **'Variegata'** (syn. *P. amoena* 'Variegata'), H 1in (2.5cm), S 10in (25cm), has white-margined leaves and bright cerise-pink flowers.
P. stolonifera (Creeping phlox). Herbaceous, prostrate, spreading perennial. H 4–6in (10–15cm), S 1ft (30cm). Leaves are oblong to ovate. Has small, saucer-shaped, pale blue flowers in early summer. Prefers moist, peaty, acidic soil; is good for a peat bed or rock garden. Z5–9. **'Ariane'** illus. p.359. **'Blue Ridge'** has abundant, lavender-blue flowers.
P. subulata (Moss phlox). Evergreen, mound-forming perennial. H 2–6in (5–15cm), S 20in (50cm). Bears fine, needlelike leaves. Abundant, star-shaped, white, pink or mauve flowers are borne in early summer. Good for a sunny rock garden. Z3–9. **'Emerald Cushion'** (syn. *P.* 'Emerald Cushion') illus. p.367. **'Marjorie'** illus. p.365. **'McDaniel's Cushion'** is vigorous, cushion-forming, and extremely free-flowering, with very large, deep pink flowers. **'Red Wings'** has carmine-red flowers with darker centers.

PHOENIX

ARECACEAE/PALMAE

Genus of evergreen palms, grown for their overall appearance and their edible fruits. Frost tender. Grows in full light, although tolerates partial shade, in any fertile, well-drained soil. Water potted specimens moderately, less during winter. Propagate by seed in spring at not less than 75°F (24°C). Red spider mite may be a nuisance.
P. canariensis (Canary Island date palm). Evergreen, upright palm with a robust trunk. H 50ft (15m), S 40ft (12m). Feather-shaped, arching leaves, each to 15ft (5m) long, are divided into narrowly lance-shaped, leathery, bright green leaflets. Bears large, pendent clusters of tiny, yellowish-brown flowers that on mature specimens are followed by shortly oblong, yellow to red fruits in fall or winter. Z10–11
P. roebelenii (Miniature date palm, Pygmy date palm). Evergreen palm with a slender trunk. H 6ft (2m) or more, S to 8ft (2.5m). Has feather-shaped, arching, glossy, dark green leaves, 3–4ft (1–1.2m) long, and, in summer, large panicles of tiny, yellow flowers. In fall, bears egg-shaped, black fruits in pendent clusters, 1½ft (45cm) long. Z11–12 (min. 50–61°F/10–16°C)

PHORMIUM

New Zealand flax

HEMEROCALLIDACEAE/LILIACEAE

Genus of evergreen perennials, grown for their bold, sword-shaped leaves. Fully to frost hardy. Requires sun and moist, but well-drained soil. Ideal for a coastal garden or as a focal point in a border. Propagate by division or by seed in spring.
***P.* 'Aurora'.** Evergreen, upright perennial. H and S 4ft (1.2m). Has linear leaves vertically striped with red, bronze, salmon-pink and yellow. Z8–10
***P.* 'Black Adder'.** Evergreen, upright perennial. H to 6ft (2m), S 10ft (3m). Has clumps of large, linear, burgundy-black leaves. Panicles of red flowers are borne on mature plants in late summer. Z8–10
***P.* 'Bronze Baby'.** Evergreen, upright perennial. H and S 24–32in (60–80cm). Has tufts of bold, stiff, pointed, wine-red leaves. Panicles of reddish flowers are occasionally produced on purplish stems in summer. Z8–10
***P. colensoi*.** See *P. cookianum*.
P. cookianum, syn. *P. colensoi* (Mountain flax). Evergreen, upright perennial. H to 6ft (2m), S 10ft (3m). Has tufts of sword-shaped, dark green leaves. Panicles of tubular, pale yellowish-green flowers are borne in summer. (borderline) Z8–10.
subsp. *hookeri* 'Tricolor' has leaves striped vertically red, yellow, and green. **'Variegatum'** has cream-striped leaves.
***P.* 'Dazzler'** illus. p.216.
P. tenax (New Zealand flax). Evergreen, upright perennial. H 12ft (4m), S 6ft (2m). Has tufts of sword-shaped, stiff, dark green leaves. Panicles of tubular, dull red flowers are produced on short, slightly glaucous green stems in summer. Thrives by the sea. Z8–10. **Purpureum Group**, H 6–8ft (2–2.5m), S 3ft (1m), has rich reddish-purple to dark copper leaves. **'Veitchianum'** bears broad, creamy-white-striped leaves.

PHOTINIA

SYN. STRANVAESIA

ROSACEAE

Genus of evergreen or deciduous shrubs and trees, with small white flowers, grown for their foliage and, in the case of deciduous species, for their fall color and fruits. Fully to frost hardy, but protect evergreen species from strong, cold winds. Requires sun or partial shade and fertile, well-drained soil; some species prefer acidic soil. Propagate evergreen and deciduous species by semiripe cuttings in summer, deciduous species also by seed in fall.
***P. arbutifolia*.** See *Heteromeles salicifolia*.
P. davidiana, syn. Stranvaesia davidiana, illus. p.90.
***P.* x *fraseri*.** Group of evergreen, hybrid shrubs or small trees. H 25ft (8m), S 20ft (6m). Has inversely lance-shaped to elliptic, dark green leaves. Young growth is often attractively colored for a long period. Produces domed heads of small, white flowers in mid- to late spring. Has good resistance to damage by late frosts. Z7–9. **'Canivily'**, H 12ft (4m), S 10ft (3m), is compact, with dark red young leaves and stems. **Pink Marble ('Cassini')**, H and S 10–12ft (3–4m), is slow-growing and open, with red young leaves irregularly marked and margined bright pink that age to mid-green edged in creamy-white.
Red Robin' illus. p.111.
P. serratifolia, syn. *P. serrulata*, illus. p.111.
***P. serrulata*.** See *P. serratifolia*.
***P. villosa*.** Deciduous, upright shrub or spreading tree. H and S 15ft (5m). Elliptic to obovate, dark green leaves, bronze-margined when young, become brilliant orange-red in fall. Bears clusters of 5-petaled flowers, in late spring, followed by spherical, red fruits. Prefers acidic soil. Z7–9

PHRAGMIPEDIUM

ORCHIDACEAE

See also ORCHIDS.
P. besseae (illus. p.467). Evergreen, terrestrial orchid for an intermediate greenhouse. H and S 6in (15cm). Has strap-shaped leaves. Pouch-lipped, bright scarlet flowers are borne in upright racemes in spring. Needs shade in summer. Z11–12 (min. 57°F/14°C; max. 86°F/30°C)
***P. caudatum*.** Evergreen, epiphytic orchid for an intermediate greenhouse. H and S 2ft (60cm). Has narrowly ovate leaves, to 2ft (60cm) long. In summer, produces sprays of flowers with light green and tan sepals and pouches and drooping, ribbonlike, yellow and brownish-crimson petals, to 1ft (30cm) long. Needs shade in summer. Z11–12 (min. 57°F/14°C; max. 86°F/30°C)

PHUOPSIS

SYN. CRUCIANELLA

RUBIACEAE

Genus of one species of mat-forming, summer-flowering perennial, grown for its small, pungent, tubular flowers. Fully

hardy. Good for groundcover, especially on banks and in rock gardens. Needs sun and well-drained soil. Propagate by division in spring, by semiripe cuttings in summer, or by seed sown in fall.
P. stylosa, syn. *Crucianella stylosa*, illus. p.338.

PHYGELIUS

SCROPHULARIACEAE

Genus of evergreen or semievergreen shrubs and subshrubs, grown for their showy, tubular flowers. Frost hardy, but in most areas plant in a sheltered site; will attain a considerably greater height when grown against a warm, sunny wall. Needs sun and fertile, well-drained, but not too dry, soil. Usually loses leaves or has shoots cut to ground by frosts. Cut back to just above ground level in spring, or, if plants have woody bases, prune to live wood. Propagate by softwood cuttings in summer.
P. aequalis illus. p.156. **'Yellow Trumpet'** illus. p.160.
P. capensis (Cape figwort). Evergreen or semievergreen, upright shrub. H 4ft (1.2m), S 5ft (1.5). Has triangular, dark green leaves. Tall, slender spires bear tubular, bright orange-red flowers, turning back toward the stems, each with a red mouth and a yellow throat, from midsummer to early fall. Z5–9
***P.* x *rectus* 'Winchester Fanfare'.** Evergreen or semievergreen, upright shrub. H and S 5ft (1.5). Has triangular, dark green leaves. Produces tubular, nodding, pale red flowers, each with scarlet lobes and a yellow throat, from midsummer to early fall. Z5–9

Phyllanthus nivosus. See *Breynia disticha*.

x PHYLLIOPSIS

ERICACEAE

Hybrid genus (*Phyllodoce* x *almiopsis*) of dwarf, evergreen shrubs, grown for their bell-shaped flowers. Suitable for peat beds or rock gardens. Fully hardy. Needs partial shade and peaty, acidic soil. Trim back after flowering to keep compact. Propagate by semiripe cuttings in late summer.
x *P. hillieri* 'Pinocchio'. Evergreen, upright shrub. H 8in (20cm), S 10in (25cm). Branched stems bear thin, ovate leaves. Long, open clusters of bell-shaped, very deep pink flowers are produced in spring and intermittently thereafter. Z3–8

Phyllitis scolopendrium. See *Asplenium scolopendrium*.

PHYLLOCLADUS

PODOCARPACEAE

See also CONIFERS.
P. aspleniifolius (Tasman celery pine). Slow-growing, upright conifer. H 15–30ft (5–10m), S 10–15ft (3–5m). Instead of true leaves has flattened, leaflike shoots known as phylloclades; these are dull dark green and resemble celery leaves in outline. Produces inedible, white-coated nuts with fleshy, red bases. Z10–11
P. trichomanoides illus. p.101.

PHYLLODOCE

ERICACEAE

Genus of evergreen shrubs and subshrubs, grown for their heathlike, leathery leaves, and their attractive flowers. Fully hardy. Requires partial shade and moist, peaty, acidic soil. Propagate by semiripe cuttings in late summer or by seed in spring.
P. caerulea, syn. *P. taxifolia*, illus. p.334.
P. empetriformis illus. p.334.
***P.* x *intermedia* 'Drummondii'** illus. p.333. **'Fred Stoker'** is an evergreen, upright subshrub. H and S 9in (23cm). Has narrow, glossy, fine-toothed, dark green leaves. From late spring to early summer, bears clusters of pitcher-shaped, bright reddish-purple flowers, on slender, red stalks, at the stem tips. Z7–10
P. nipponica. Evergreen, upright, freely branched subshrub. H and S to 8in (20cm). Has fine, linear, dark green leaves, with white-downy midribs and rolled margins. In late spring and early summer, loose clusters of stalked, pendant, bell-shaped, white flowers are borne from stem tips on upright, red-tinted stalks. Z6–10
P. taxifolia. See *P. caerulea*.

PHYLLOSTACHYS

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
P. aurea (Golden bamboo) illus. p.288.
P. aureosulcata (Yellow-groove bamboo). Evergreen, clump-forming bamboo. H 10–20ft (3–6m), S indefinite. Has striped sheaths and yellow grooves on rough, brownish-green stems. Mid-green leaves are up to 6in (15cm) long; rarely produces flowers. Z6–10
P. bambusoides (Timber bamboo) illus. p.287.
P. flexuosa (Zigzag bamboo). Evergreen, clump-forming bamboo. H 6–30ft (2–10m), S indefinite. Has slender, markedly zigzag stems that turn black with age. Leaf sheaths have no bristles. Leaves stay fresh green all winter. Z6–10
***P.* 'Henonis'.** See *P. nigra* f. *henonis*.
P. nigra (Black bamboo) illus. p.286.
f. *henonis* (syn. *P.* 'Henonis') illus. p.287.
P. viridiglaucescens illus. p.287.
P. vivax* f. *aureocaulis illus. p.289.

x PHYLLOTHAMNUS

ERICACEAE

Hybrid genus (*Phyllodoce* x *Rhodothamnus*) of one species of evergreen shrub, grown for its heathlike, linear leaves and its funnel-shaped flowers. Good for a peat bed or shady rock garden. Fully hardy. Needs a sheltered, partially shaded site and moist, acidic soil. Propagate by semiripe cuttings in late summer.
x *P. erectus.* Evergreen, upright shrub. H 10in (25cm), S 1ft (30cm). Has small, linear, glossy, deep green leaves. Clusters of slender-stalked, widely funnel-shaped, soft rose-pink flowers, ½in (1cm) across, are borne in late spring and early summer. Z3–8

Phyodina. See *Callisia*.

PHYSALIS

Chinese lantern

SOLANACEAE

Genus of one variable, summer-flowering perennial, grown for its decorative, lanternlike calyces and fruits. Fully to half hardy. Grows in sun or shade and in well-drained soil. Propagate by division or softwood cuttings in spring, annuals by seed in spring or fall. ⓘ All parts of *P. alkekengi*, except the fully ripe fruit, may cause mild stomach upset if ingested; contact with foliage may irritate skin.
P. alkekengi (Bladder cherry, Winter cherry). Spreading perennial, grown as an annual. H 2–2½ft (60–75cm), S 3ft (90cm) or more. Leaves are mid-green and ovate. Inconspicuous, nodding, star-shaped, white flowers in summer are followed, in fall, by rounded, bright orange-red fruits, surrounded by inflated, orange calyces. Z6–9

PHYSOCARPUS

ROSACEAE

Genus of deciduous, mainly summer-flowering shrubs, grown for their foliage and flowers. Fully hardy. Requires sun and fertile, not too dry soil. Prefers acidic soil and does not grow well on shallow, chalky soil. Thin established plants occasionally by cutting some older shoots back to ground level after flowering. Propagate by softwood cuttings in summer.
P. opulifolius (Ninebark). Deciduous, arching, dense shrub. H 6–10ft (2–3m). Has peeling bark and broadly ovate, toothed and lobed, mid-green leaves. Bears clusters of tiny, at times pink-tinged, white flowers in early summer. Z2–8.
'Dart's Gold' illus. p.159. **'Diabolo'** has dark blackish-red leaves. **Lady in Red ('Tuildad')**, H 6ft (2m), S 4ft (1.2m), is compact and tightly branched, with copper-red foliage and pale pink flowers.

PHYSOPLEXIS

CAMPANULACEAE

Genus of one species of tufted perennial, grown for its flowers. Good grown on tufa, in rock gardens, troughs, and alpine houses. Fully hardy. Needs sun and very well-drained, alkaline soil, but should face away from midday sun. Keep fairly dry in winter. Propagate by seed in fall or by softwood cuttings in early summer. Susceptible to slug damage.
P. comosa, syn. *Phyteuma comosum*, illus. p.366.

PHYSOSTEGIA

Obedient plant

LAMIACEAE/LABIATAE

Genus of summer- to early fall-flowering, erect, deciduous perennials. Fully hardy to frost hardy. Needs sun and fertile, moist but well-drained soil. Propagate by division in spring.
P. virginiana. Erect perennial. H 3ft (1m), S 2ft (60cm). Has lance-shaped, sharply toothed, mid-green leaves. In late summer, bears spikes of hooded, 2-lipped, rose-purple flowers with hinged stalks that allow flowers to remain in position once moved. Z3–9. **var. *speciosa* 'Variegata'** (syn. *P.v.* 'Variegata') illus. p.233.
'Summer Snow' has pure white flowers.
'Variegata' see *P.v.* var. *speciosa* 'Variegata'. **'Vivid'** illus. p.280.

PHYTEUMA

Horned rampion

CAMPANULACEAE

Genus of early- to midsummer-flowering perennials that are useful for rock gardens. Fully hardy. Needs sun and well-drained soil. Propagate by seed in fall.
P. comosum. See *Physoplexis comosa*.
P. scheuchzeri illus. p.342.

PHYTOLACCA

Pokeweed

PHYTOLACCACEAE

Genus of perennials and evergreen shrubs and trees, grown for their overall appearance and decorative but poisonous fruits. Fully hardy to frost tender. Tolerates sun or shade and requires fertile, moist soil. Propagate by seed in fall or spring. ⓘ All parts may cause severe discomfort if ingested; the fruits of *P. americana* may be lethal if eaten. Contact with the sap may irritate skin.
P. americana, syn. *P. decandra*. Upright, spreading perennial. H to 12ft (4m), S 3ft (1m). Ovate to lance-shaped, mid-green leaves are tinged purple in fall. Shallowly cup-shaped, sometimes pink-flushed, white-and-green flowers, borne in terminal racemes in summer, are followed by poisonous, rounded, fleshy, blackish-purple berries. Z4–8
P. clavigera. See *P. polyandra*.
P. decandra. See *P. americana*.
P. polyandra, syn. *P. clavigera*. Stout, upright perennial. H 6ft (2m), S 2ft (60cm). Has brilliant crimson stems and ovate to lance-shaped, mid-green leaves that turn yellow in fall. In late summer, bears clusters of shallowly cup-shaped, pink flowers, followed by poisonous, blackish-purple berries. Z9–11

PICEA

Spruce

PINACEAE

Genus of evergreen conifers with needlelike leaves set on a pronounced peg on the shoots and arranged spirally. Fully hardy to frost hardy. Cones are pendulous and ripen in their first fall; scales are woody and flexible. See also CONIFERS.
P. abies (Common spruce, Norway spruce) illus. p.98. **'Acrocona'** is a small tree, conical when young, columnar when mature. H 3–10ft (1–3m), S 10–12ft (3–4m). Has pendent branches and blunt, dark green leaves. Even young trees produce abundant cylindrical, deep green cones that turn brown.
'Clanbrassiliana', H and S 20in (50cm), is slow-growing, with a rounded, spreading habit. **'Inversa'**, H 15–30ft (5–10m), S 6ft (2m), has an erect leader, but pendent side branches. **'Little Gem'**, H and S 12–20in (30–50cm), has a nest-shaped, central depression caused by spreading branches. **'Nidiformis'**, H to 5ft (1.5), S 10–12ft (3–4m), also has a "nest" in its center, but is

larger and faster-growing. **'Ohlendorffii'** (illus. p.105), H 10ft (3m), S 6–15ft (2–5m), is slow-growing, initially rounded, becoming conical with age. **'Rydal'**, H 6ft (2m), S 4ft (1.2m), is small and upright, with bright red young growth, aging to green. Z3–7
P. breweriana (Brewer's spruce) illus. p.99.
P. engelmannii (Engelmann spruce, Mountain spruce) illus. p.99.
P. glauca (White spruce). Narrowly conical conifer. H to 160ft (50m), S 10–20ft (3–6m). Glaucous shoots produce blue-green leaves. Egg-shaped, light brown cones fall after ripening. Z3–6. **var. *albertiana* 'Conica'** (syn. *P.g.* 'Albertiana Conica'), H 6–15ft (2–5m), S 3–8ft (1–2.5m), is slow-growing with a neat, pyramidal habit, longer leaves and smaller cones. **'Albertiana Conica'** see *P.g.* var. *albertiana* 'Conica'. **'Coerulea'** illus. p.99. **'Echiniformis'**, H 20in (50cm), S 3ft (90cm), has a dwarf, flat-topped, rounded form.
P. likiangensis (Lijiang spruce) illus. p.100.
P. mariana (Black spruce). Conical conifer, whose lowest branches often layer naturally, forming a ring of stems around the parent plant. H 30–70ft (10–20m), S 6–10ft (2–3m). Leaves are bluish-green or bluish-white. Ovoid cones are dark gray-brown. Z3–6. **'Doumetii'** illus. p.103. **'Nana'**, H 20in (50cm), S 20–32in (50–80cm), is a neat shrub with blue-gray foliage.
***P.* x *mariorika* 'Gnom'**, syn. *P. omorika* 'Gnom', is a shrublike conifer with pendent branches arching at tips. H to 5ft (1.5), S 3–6ft (1–2m). Dark green leaves are white beneath. Z3–6
P. morrisonicola (Taiwan spruce) illus. p.101.
P. omorika (Serbian spruce) illus. p.98. **'Gnom'** see *P.* x *mariorika* 'Gnom'. **'Nana'**, H and S 3ft (1m), is a slow-growing, rounded or ovate tree. Has dark to blue-green leaves. Bears ovate to oblong, red-brown, later brown, female cones. Z4–7
P. orientalis (Caucasian spruce, Oriental spruce). Columnar, dense conifer. H 100ft (30m), S 20–25ft (6–8m). Has glossy, deep green leaves and ovoid to conical cones, 2½–4in (6–10cm) long, dark purple, ripening to brown, the males brick-red in spring. Z5–8. **'Aurea'** has golden, young foliage in spring, later turning green. **'Skylands'** illus. p.99.
P. pungens (Colorado spruce). Columnar conifer. H 50ft (15m), S 15ft (5m). Has scaly, gray bark and very sharp, stout, grayish-green or bright blue leaves. Cylindrical, light brown cones have papery scales. Z2–7. **'Globosa'** (illus. p.105) is a slow-growing, rounded form of dense habit and glaucous- blue leaves. **'Hoopsii'**, H 30–50ft (10–15m), has silvery-blue foliage. **'Koster'** illus. p.99. **'Montgomery'**, H and S 3ft (1m), is dwarf, compact, conical or spreading, with gray-blue leaves.
P. sitchensis (Sitka spruce). Vigorous, broadly conical conifer. S 20–40ft (6–12m), but H 80–160ft (25–50m) in damp locations, 50–70ft (15–20m) in dry sites. Bark scales on old trees. Has prickly, bright deep green leaves and cylindrical, papery, pale brown or whitish cones, 2–4in (5–10cm) long. Good on an exposed or poor site. Z6–9
P. smithiana (Morinda spruce). Slow-growing conifer, conical when young, columnar with horizontal branches and weeping shoots when mature. H 80–100ft (25–30m), S 20ft (6m). Has dark green leaves and produces cylindrical, bright brown cones, 4–8in (10–20cm) long. Z6–9

PICRASMA

SIMAROUBACEAE

Genus of deciduous trees, grown for their brilliant fall color. Produces insignificant flowers in late spring. Fully hardy. Requires sun or partial shade and fertile, well-drained soil. Propagate by seed in fall.
P. ailanthoides. See *P. quassioides*.
P. quassioides, syn. *P. ailanthoides* (Quassia), illus. p.92.

PIERIS

ERICACEAE

Genus of evergreen shrubs, grown for their foliage and small, profuse, urn-shaped flowers. Fully to frost hardy. Needs a sheltered site in partial shade or shade and in moist, peaty, acidic soil. Young shoots are sometimes frost-killed in spring and should be cut back as soon as possible. Deadheading after flowering improves growth. Propagate by soft tip or semiripe cuttings in summer. ⓣ Leaves may cause severe discomfort if ingested.
***P.* 'Flaming Silver'.** Small, fairly compact, upright shrub. H 3–4ft (1–1.2m), S 24–32in (60–80cm). Slender, finely toothed leaves are glossy green, bright pinkish-red when young, with irregular, creamy-white margins. White flowers are borne in mid- to late spring. Z4–7
***P.* 'Forest Flame'.** Evergreen, upright shrub. H 12ft (4m), S 6ft (2m). Narrowly ovate, glossy leaves are brilliant red when young, then turn pink, cream, and finally dark green. White flowers open with the young leaves from mid- to late spring. Z4–7
P. formosa. Evergreen, bushy, dense shrub. H 15ft (5m), S 12ft (4m). Large, oblong, glossy, dark green leaves are bronze when young. Bears large clusters of white flowers from mid- to late spring. Z4–7. **var. *forrestii* 'Wakehurst'** illus. p.137.
P. japonica illus. p.110. **'Bonfire'** is a compact, slow-growing, rounded shrub. H and S 2–3ft (60–100cm). Has toothed, glossy, mid-green leaves. deep red when young. Produces upright clusters of white flowers with contrasting red calyces. **'Carnaval'**, H 4–5ft (1.2–1.5m), S 32–36in (80–100cm), Has dark green leaves, finely and irregularly margined white; young leaves are chestnut-brown, soon turning deep red. Bears long, pendent clusters of flowers. Compact and low-growing **'Debutante'** has white flowers in dense, erect panicles. **'Mountain Fire'** has brilliant red young foliage. **'Pink Delight'**, H 6ft (1.8m), S 3ft (1m), is upright, with red young leaves and dark pink flowers that fade to pale pinkish-white. **'Prelude'**, H 5ft (1.5), S 6ft (2m), is compact, with coppery young leaves, turning dull light green, and flowers borne in dense, upright clusters. **'Scarlett O'Hara'** illus. p.120. **'Valley Valentine'** has large panicles of dark dusky red flowers. **'Variegata'** has small leaves, edged with white. Z4–7

PILEA

URTICACEAE

Genus of bushy or trailing, semisucculent annuals and evergreen perennials, grown for their ornamental foliage. Frost tender. Grow in any well-drained soil out of direct sunlight and draughts; do not overwater in winter. Pinch out tips in growing season to avoid straggly plants. Propagate annuals by seed in spring or fall; perennials by stem cuttings in spring or summer. Red spider mite may be a problem.
P. cadierei (Aluminum plant) illus. p.465.
P. involucrata, syn. *P. mollis* (Friendship plant). Evergreen, bushy perennial. H 1¼in (3cm), S 1ft (30cm). Ovate to rounded, corrugated, bronze leaves, to 2in (5cm) long, are reddish-green below; leaves are green when grown in shade. Z12 (min. 59°F/15°C)
P. mollis. See *P. involucrata*.
P. nummulariifolia (Creeping Charlie) illus. p.474.
P. peperomioides. Open-bushy, erect, perennial succulent. H and S 1ft (30cm) or more. Thick, fleshy stems produce spirally arranged, long-stalked, ovate, pale green leaves. Z10–12 (min. 41°F/5°C)

PILEOSTEGIA

HYDRANGEACEAE

Genus of evergreen, woody-stemmed root climbers. Frost hardy. Grows in sun or shade and in any well-drained soil; useful for planting against a sunless wall. Prune in spring, if required. Propagate by semiripe cuttings in summer.
P. viburnoides, syn. *Schizophragma viburnoides*, illus. p.196.

PILOSOCEREUS

CACTACEAE

Genus of columnar, summer-flowering, perennial cacti with woollike spines in flowering zones at crowns. Some species are included in *Cephalocereus*. Frost tender. Needs full sun and very well-drained soil. Propagate by seed or by stem cuttings in spring or summer.
P. leucocephalus, syn. *P. palmeri*, illus. p.483.
P. palmeri. See *P. leucocephalus*.
P. senilis. See *Cephalocereus senilis*.

PIMELEA

THYMELAEACEAE

Genus of evergreen shrubs and subshrubs, grown for their tubular flowers and overall appearance. In frost-prone areas, grow in containers outdoors and bring under cover in winter, or grow in a cool greenhouse. Frost hardy to frost tender. Needs full sun and well-drained, neutral to acidic soil. Water potted plants moderately, less when temperatures are low. Needs good winter light and ventilation in a greenhouse. Propagate by seed in spring or by semiripe cuttings in late summer.
P. ferruginea illus. p.454.

PINELLIA

ARACEAE

Genus of summer-flowering, tuberous perennials that produce slender, hood-like, green spathes, each enclosing and concealing a pencil-shaped spadix. Frost hardy. Needs partial shade or sun and humus-rich soil. Water well in spring and summer. Dormant in winter. Propagate in early spring by offsets, or in late summer by bulbils borne in leaf axils.
P. ternata. Summer-flowering, tuberous perennial. H to 8in (20cm), S 2in (5cm). Has erect stems crowned by ovate, flat, 3-parted leaves. Leafless stem bears a tubular, green spathe, 2–2½in (5–6cm) long, with a hood at the tip. Z9–11

PINGUICULA

Butterwort

LENTIBULARIACEAE

Genus of spring- or summer-flowering perennials with sticky leaves that trap insects and digest them for food. Useful in pots under glass among plants at risk from aphids. Fully hardy to frost tender. Needs sun and wet soil. Propagate by division in early spring or by seed in fall.
P. caudata. See *P. moranensis* var. *caudata*.
P. grandiflora illus. p.368.
P. moranensis* var. *caudata, syn. *P. caudata*. Basal-rosetted perennial. H 5–6in (12–15cm), S 2in (5cm). Leaves are narrowly ovate and dull green with inrolled, purplish margins. In summer, 5-petaled, deep carmine flowers are borne on long stems. Z10–12 (min. 45°F/7°C)

PINUS

Pine

PINACEAE

Genus of small to large conifers with spirally arranged leaves in bundles, usually of 2, 3, or 5 needles. Cones ripen over 2 years and are small in the first year. See also CONIFERS.
P. aristata (Bristle-cone pine) illus. p.103.
P. armandii (Armand pine). Conical, open conifer. H 50–70ft (15–20m), S 20–25ft (6–8m). Has smooth bark, becoming cracked with age, pendent, glaucous blue leaves and conical, green cones, 3–10in (8–25cm) long, that ripen to brown. Z3–7
P. ayacahuite (Mexican white pine) illus. p.95.
P. banksiana (Jack pine) illus. p.102.
P. bungeana (Lace-bark pine; illus. p.78). Slow-growing, bushy conifer. H 30–50ft (10–15m), S 15–20ft (5–6m). Has gray-green bark that flakes to reveal creamy-yellow patches, darkening to red or purple. Leaves are dark green. Z2–6
P. cembra (Arolla pine) illus. p.101.
P. cembroides (Mexican stone pine, Pinyon) illus. p.103.
P. chylla. See *P. wallichiana*.
P. contorta (Beach pine, Shore pine) illus. p.102. **var. *latifolia*** (Lodgepole pine) illus. p.101. **'Spaan's Dwarf'** is a conical, open, dwarf conifer with a sloped trunk and short, stiffly erect shoots. H and S 30in (75cm). Has bright green leaves in pairs. Z4–8
P. coulteri (Big-cone pine, Coulter pine) illus. p.96.

P. densiflora (Japanese red pine). Broadly conical to rounded conifer, becoming flat-topped. H 50–80ft (15–25m), S 15–22ft (5–7m). Has scaling, reddish-brown bark, slender, bright green leaves and conical, yellow or pale brown cones. Z3–7. **'Alice Verkade'**, H 20in (50cm) or more, S 3ft (1m), is a diminutive, rounded form with fresh green leaves. **'Tagyosho'** see *P.d.* 'Umbraculifera'. **'Umbraculifera'** (syn. *P.d.* 'Tagyosho'), H 12ft (4m), S 20ft (6m), is a slow-growing, rounded or umbrella-shaped form.
P. excelsa. See *P. wallichiana*.
P. griffithii. See *P. wallichiana*.
P. halepensis (Aleppo pine). Conical, open-crowned conifer. H 50–80ft (15–25m) S 22–40ft (7–12m). Has an open habit and bright green leaves, 2½–4½in (6–11cm) long, and ovoid, glossy, brown cones. Young trees retain glaucous, juvenile needles for several years. Z9–10
P. heldreichii, syn. *P. leucodermis* (Bosnian pine), illus. p.98. **'Compact Gem'** is a broadly conical, dense, dwarf conifer. H and S 10–12in (25–30cm). Has scaly, ash-gray bark and very dark green leaves in pairs. Grows only 1in (2.5cm) a year. Z3–8. **'Smidtii'** (illus. p.105) is a dwarf form with an ovoid habit and sharp, dark green leaves.
P.* x *holfordiana (Holford pine) illus. p.95.
P. insignis. See *P. radiata*.
P. jeffreyi (Black pine, Jeffrey pine) illus. p.97.
P. leucodermis. See *P. heldreichii*.
P. mugo (Dwarf mountain pine). Spreading, shrubby conifer or spreading tree. H to 11½ft (3.5m), S to 15ft (5m). Has scaly, gray bark, bright to dark green leaves in pairs and ovoid, brown cones. Z3–7. **'Gnom'**, H and S to 6ft (2m), and '**Mops'** (illus. p.105), H 3ft (1m), S 6ft (2m), are rounded shrubs.
P. muricata (Bishop pine) illus. p.97.
P. nigra (Austrian pine, European black pine). Upright, later spreading conifer, generally grown in one of the following forms. Z4–7. **'Hornibrookiana'**, H 5–6ft (1.5–2m), S 6ft (2m), is shrubby with stout, spreading or erect branches and dark green leaves in pairs. **subsp. *laricio*** (syn. *P.n.* subsp. *maritima*; Corsican pine), H to 130ft (40m), S to 30ft (10m), is fast-growing and narrowly conical with an open crown; bears gray-green leaves, in pairs, and ovoid to conical, yellow- or pale gray-brown cones. **subsp. *maritima*** see *P.n.* subsp. *laricio*. **subsp. *nigra*** (Austrian pine) illus. p.98.
P. parviflora (Japanese white pine) illus. p.99. **'Adcock's Dwarf'** is a slow-growing, rounded, dense, dwarf conifer. H 6–10ft (2–3m), S 5–6ft (1.5–2m). Bears short, gray-green leaves in 5s. Z5–7
P. patula (Mexican weeping pine) illus. p.97.
P. peuce (Macedonian pine) illus. p.95.
P. pinaster (Cluster pine, Maritime pine) illus. p.97.
P. pinea (Stone pine, Umbrella pine) illus. p.104.
P. ponderosa (Western yellow pine) illus. p.97.
P. pumila (Dwarf Siberian pine). Spreading, shrubby conifer. H and S 6–20ft (2–6m). Has bright blue-green leaves in 5s. Ovoid cones are violet-purple, ripening to red-brown or yellow-brown, the males bright red-purple in spring. Z4–8. **'Globe'**, H and S 1½–3ft (50cm–1m), is a rounded cultivar with blue foliage.
P. radiata, syn. *P. insignis* (Monterey pine), illus. p.98.
P. rigida (Northern pitch pine) illus. p.100.
P. strobus (Eastern white pine, Weymouth pine) illus. p.96.
P. sylvestris (Scots pine; illus. p.78). Conifer, upright and with whorled branches when young, that develops a spreading, rounded crown with age. H 50–100ft (15–30m), S 20–28ft (6–9m). Bark is flaking and red-brown on upper trunk, fissured and purple-gray at base. Has blue-green leaves in 2s and conical, green cones that ripen to pale gray- or red-brown. Z3–8. **'Aurea'** illus. p.104. **'Beuvronensis'**, H and S 3ft (1m), is a rounded shrub. **'Doone Valley'**, H and S 3ft (1m), is an upright, irregularly shaped shrub. **f. *fastigiata*** see Fastigiata Group. **Fastigiata Group** (syn. *P.s.* f. *fastigiata*), H up to 25ft (8m), S 3–10ft (1–3m), has a narrow, obelisk habit; suffers wind damage in an exposed site. **'Gold Coin'**, H and S 6ft (2m), is a dwarf version of *P.s.* 'Aurea'. **'Nana'** see *P.s.* 'Watereri'. **'Watereri'** (syn. *P.s.* 'Nana'), H 12ft (4m), S 22ft (7m), is a very dense cultivar with widely spaced leaves.
P. thunbergii (Japanese black pine) illus. p.100.
P. wallichiana, syn. *P. chylla*, *P. excelsa*, *P. griffithii* (Bhutan pine, Himalayan pine), illus. p.97.

PIPTANTHUS

PAPILIONACEAE/LEGUMINOSAE

Genus of deciduous or semievergreen shrubs, grown for their foliage and pealike flowers. Frost hardy. In cold areas needs the protection of a warm, sunny wall. Requires sun and fertile, well-drained soil. In spring, cut some older shoots back to ground level and prune any frost-damaged growths back to healthy wood. Propagate by seed in fall.
P. laburnifolius. See *P. nepalensis*.
P. nepalensis, syn. *P. laburnifolius*, illus. p.206.

PISONIA

NYCTAGINACEAE

Genus of evergreen shrubs, trees, and climbers grown for their attractive foliage and overall appearance. Frost tender. Needs full light or partial shade and humus-rich, well-drained soil. Water containerized specimens freely when in full growth, moderately at other times. Pruning is tolerated if required. Propagate by seed in spring or by semiripe cuttings in summer.
P. brunoniana. See *P. umbellifera*.
P. umbellifera, syn. *Heimerliodendron brunonianum*, *P. brunoniana* (Bird-catcher tree, Para para). Evergreen, rounded large shrub or small tree, usually freely branching. H 15–70ft (5–20m), S 10–15ft (3–5m). Has elliptic to lance-shaped, leathery, glossy, rich green leaves. In spring, bears clusters of tiny, green or pink flowers, followed by 5-winged, sticky, brownish fruits. Z11–12 (min. 50˚F/10˚C)

PISTACIA

Pistachio

ANACARDIACEAE

Genus of evergreen or deciduous trees, grown for their foliage and overall appearance. Frost hardy to half hardy. Requires full light and free-draining, even dry soil. Water containerized plants moderately when in full growth, sparingly at other times. Pruning is tolerated if necessary. Propagate by seed in spring or by semiripe cuttings in summer.
P. lentiscus (Mastic tree). Evergreen, irregularly rounded shrub or tree. H and S 3–10ft (1–3m). Bears leaves that are divided into 2–5 pairs of ovate, leathery, glossy leaflets. Produces auxillary clusters of insignificant flowers from spring to early summer that develop into round, red then black fruits in fall. Z10–11
P. terebinthus (Terebinth, Turpentine tree). Deciduous, rounded to ovoid tree. H 20–28ft (6–9m), S 10–20ft (3–6m) Leaves have 3–6 pairs of ovate, usually lustrous, rich green leaflets. Axillary clusters of small flowers, borne in spring and early summer, develop into tiny, round to ovoid, red then purple-brown fruits in fall. Z9–11

PITCAIRNIA

BROMELIACEAE

Genus of very variable, usually evergreen, rosette-forming perennials (bromeliads), grown for their overall appearance. Frost hardy to frost tender. Needs partial shade and well-drained soil. Water moderately in growing season, sparingly at other times. Propagate by offsets or division in spring.
P. andreana. Evergreen, clump-forming, basal-rosetted perennial. H 8in (20cm), S 1ft (30cm) or more. Loose rosettes comprise narrowly lance-shaped, strongly arching, green leaves, gray-scaled beneath.Racemes of tubular, orange-and-red flowers are borne in summer. Z11–12 (min. 50°F/10°C)
P. heterophylla. Evergreen, epiphytic or terrestrial, perennial with loose, basal rosettes and swollen, much-branched rhizomes. H 4in (10cm) or more, S to 1ft (30cm). Outer leaves resemble barbed spines, inner leaves are strap-shaped, low-arching and green, with downy, white undersides. Bears almost stemless spikes of tubular, bright red, or rarely white flowers, amid red bracts, in summer. Z10–11

PITTOSPORUM

PITTOSPORACEAE

Genus of evergreen trees and shrubs, grown for their ornamental foliage and fragrant flowers. Frost hardy to frost tender. Does best in mild areas; in cold regions, grow against a warm, sunny wall. *P. crassifolium* can be grown as a wind-resistant hedge in mild, coastal areas; forms with variegated or purple leaves prefer sun. Others will grow in sun or partial shade. All need well-drained soil. Propagate *P. dallii* by budding in summer, other species by seed in fall or spring or by semiripe cuttings in summer; propagate selected forms by semiripe cuttings only in summer.
***P.* 'Arundel Green'**, syn. *P. tenuifolium* 'Arundel Green'. Evergreen, rounded shrub. H and S 5ft (1.5). Produces ovate, wavy-margined, bright green leaves on blackish stems. In late spring, scented, dark red flowers are borne in the leaf axils of mature plants. Z9–11
P. crassifolium (Karo). Evergreen, bushy-headed, dense, small tree or shrub. H 15–30ft (5–10m), S 6–15ft (2–5m). Has oblong, dark green leaves, gray-felted beneath. Clusters of small, fragrant, star-shaped, dark reddish-purple flowers are borne in spring. Z9–11
P. dalii illus. p.119.
P. eugenioides (Tarata). Evergreen, columnar tree. H 30ft (10m), S 6–15ft (2–5m). Narrowly ovate, wavy-edged leaves are glossy, dark green, and lemon-scented when crushed. Honey-scented, star-shaped, pale yellow flowers are produced in summer. Z9–11.
'Variegatum' illus. p.93.
***P.* 'Garnettii'** illus. p.119.
P. tenuifolium illus. p.120. **'Arundel Green'** see *P.* 'Arundel Green'. **'Irene Paterson'** is a slow-growing, large, bushy shrub or small tree. H to 4ft (1.2m), S to 2ft (60cm). Has glossy, usually wavy-margined, white leaves, speckled and mottled between the veins, on dark stems. Bears bell-shaped, honey-scented, blackish-red flowers in late spring to early summer. Z9–10. **'Tom Thumb'** illus. p.164. **'Warnham Gold'** is fast-growing, with wavy-edged, golden-green leaves that mature to golden-yellow.
P. tobira (Japanese mock orange). Evergreen, bushy-headed, dense tree or shrub. H 20ft (6m), S 12ft (4m). Has oblong to ovate, glossy, dark green leaves. Very fragrant, star-shaped, white flowers, opening in late spring, later become creamy-yellow. Z9–11. **'Variegatum'** has gray-green leaves, irregularly margined white.

Plagianthus lyallii. See *Hoheria lyallii*.
Plagiorhegma dubia. See *Jeffersonia dubia*.

PLANTAGO

Plantain

PLANTAGINACEAE

Genus of summer-flowering annuals, biennials, and evergreen perennials and shrubs. Many species are invasive weeds, but a few are grown for their architectural value and foliage. Fully hardy to frost hardy. Needs full sun and well-drained soil. Water potted plants moderately, sparingly in winter. Propagate by seed or division in spring.
P. major. Variable, sometimes invasive perennial. H 8–16in (20–40cm), S to 1ft (30cm). Has rosettes of ovate, mid-green leaves. In summer, bears spikes of mid-green flowers on leafless stems. Z3–12.
'Atropurpurea' see *P.m.* 'Rubrifolia'.
'Bowles's Variety' see *P.m.* 'Rosularis'.
'Rosularis', syn. 'Bowles's Variety', is a mutation in which the flower spike develops as a cabbagelike rosette of small, ovate leaves. **'Rubrifolia'**, syn. 'Atropurpurea', has purplish-maroon leaves and is prone to mildew.
P. nivalis illus. p.376.

PLATANUS
Plane

PLATANACEAE

Genus of deciduous trees, grown for their imposing habit, foliage, and flaking bark. Flowers are inconspicuous. Spherical fruit clusters hang from shoots in fall. Fully hardy to frost hardy. Requires full sun and deep, fertile, well-drained soil. Propagate species by seed in fall, *P.* x *hispanica* by hardwood cuttings in early winter. All except *P. orientalis* are susceptible to the fungal disease plane anthracnose. ⓘ Contact with the basal tufts of hair on the fruits may irritate the skin and respiratory system.

***P.* x *acerifolia*.** See *P.* x *hispanica*.

P.* x *hispanica, syn. *P.* x *acerifolia* (London plane), illus. p.63.

P. orientalis (Oriental plane) illus. p.63. **f. *digitata*** (syn. 'Laciniata') is a vigorous, spreading tree. H and S 100ft (30m) or more. Has flaking, gray, brown, and cream bark and glossy green leaves deeply divided into 3–5, sometimes slightly toothed, fingerlike lobes. Clusters of fruits persist into fall and winter. **'Laciniata'** see *P.o.* f. *digita*. H6

PLATYCARYA

JUGLANDACEAE

Genus of deciduous, large shrubs or trees, grown for their foliage, which turns yellow in fall, their catkins, and their long-lasting conelike, racemes of fruit. Fully hardy. Requires full sun and fertile, well-drained soil. Propagate by seed in fall.

***P. strobilacea*.** Deciduous, spreading tree. H and S 50ft (15m). Has ashlike, bright green leaves with 7–15 leaflets. Upright, green catkins are borne from mid- to late summer; males are slender and cylindrical, often drooping at tips, females are conelike, turn brown and persist through winter. Z6–9

PLATYCERIUM
Staghorn fern

POLYPODIACEAE

Genus of evergreen, epiphytic ferns, best grown in hanging baskets or fastened to and suspended from pieces of wood. Produces 2 kinds of fronds: permanent, broad, sterile "nest leaves" forming the main part of the plant; and strap-shaped, arching fertile fronds, often partly divided into two. Frost tender. Thrives in warm, humid, partial shaded conditions; needs fibrous, peaty compost with hardly any soil. Propagate by detaching buds in spring or summer and planting in compost, or by spores in summer or early fall.

P. alcicorne of gardens. See *P. bifurcatum*.

P. bifurcatum, syn. *P. alcicorne* of gardens (Common staghorn fern), illus. p.479.

P. superbum (Giant staghorn fern). Epiphytic fern. H 6ft (2m), S 5ft (1.5).Long, grayish-green, sterile fronds, to 6ft (2m), are rounded to kidney-shaped, with deeply lobed upper margins. Leathery, bright green, fertile fronds fork into strap-shaped segments; a large, round patch of spores forms between the 2 main forks. Z11–12 (min. 50°F/10°C)

PLATYCLADUS
Oriental thuja

CUPRESSACEAE

ⓘ Contact with the foliage may aggravate skin allergies. See also CONIFERS.

P. orientalis, syn. *Biota orientalis*, *Thuja orientalis*. Conifer with an irregularly rounded crown. H to 50ft (15m), S to 20ft (6m). Has fibrous bark and flattened, vertical sprays of scalelike, scentless, mid- or yellow-green leaves. Egg-shaped cones are glaucous gray. Z6–9. **'Aurea Nana'** (illus. p.105), H and S 3ft (90cm), is a dwarf cultivar with yellow-green foliage that turns bronze in winter. **'Franky Boy'**, H 6ft (2m), S 4ft (1.2m), is shrubby with upswept growth and threadlike, golden foliage that turns pale green in summer and bronzed in winter. '**Semperaurea'**, H 10ft (3m), S 6ft (2m), is compact, with golden leaves.

PLATYCODON
Balloon flower

CAMPANULACEAE

Genus of one species of perennial, grown for its flowers in summer. Fully hardy. Needs sun and light, sandy soil. Propagate by basal cuttings of non-flowering shoots in summer, with a bit of root attached, or by seed in fall.

P. grandiflorus illus. p.269.

Apoyama Group are dwarf, clump-forming perennials. H 8in (20cm), S 1ft (30cm). Have ovate, sharply toothed, bluish-green leaves. In late summer, clusters of large, balloonlike flower buds at stem tips open into bell-shaped, blue, purple, violet, or white flowers. **'Mariesii'**, H and S 1½ft (45cm), produces blue or purplish-blue flowers. Z3–8

PLATYSTEMON

PAPAVERACEAE

Genus of one species of very variable, summer-flowering annual. Fully hardy. Grow in sun and in fertile, well-drained soil. Propagate by seed sown outdoors in spring or early fall.

P. californicus (Cream cups) illus. p.321.

PLECTRANTHUS

LAMIACEAE/LABIATAE

Genus of annuals, evergreen, trailing, or bushy perennials, semisucculents, and shrubs, grown for their foliage. Frost tender. Easy to grow if kept moist in partial shade or bright light. Cut back stem tips in growing season if plants become too straggly. Propagate by stem cuttings or division in spring or summer.

P. australis of gardens. See *P. verticillatus*.

***P. coleoides* 'Variegatus'** of gardens. See *P. madagascariensis* 'Variegated Mintleaf'.

***P. forsteri* 'Marginatus'** illus. p.298.

***P. fruticosus* 'James'** illus. p.454.

P. madagascariensis (Mintleaf). Creeping, shrubby perennial. H 1ft (30cm), S indefinite. Has rounded, scalloped, fleshy leaves. Bears 2-lipped, lavender-blue or white flowers, often dotted with red. Z10–12 (min. 45°F/7°C). **'Variegated Mintleaf'** (syn. *P. coleoides* 'Variegatus' of gardens) has white-variegated leaves.

P. oertendahlii (Candle plant, Swedish ivy). Evergreen, prostrate perennial. H to 8in (20cm), trailing to 3ft (1m) or more. Rounded, scalloped, dark green leaves are reddish-green below, with white veins above. Has racemes of tubular, white or pale mauve flowers at irregular intervals throughout the year. Z10–12 (min. 45°F/7°C)

***P. scutellarioides*.** See *Solenostemon scutellarioides*.

P. thyrsoideus, syn. *Coleus thyrsoideus, Solenostemon thyrsoideus*. Fast-growing, bushy perennial, often grown as an annual. H to 3ft (1m), S 2ft (60cm). Has heart-shaped, serrated, mid-green leaves. Spikes of tubular, bright blue flowers are borne at various times of year. Z10–11 (min. 39°F/4°C)

P. verticillatus, syn. *P. australis* of gardens (Swedish ivy). Evergreen, trailing perennial with square stems. H to 6in (15cm), S indefinite. Has rounded, waxy, glossy, green leaves with scalloped edges. Racemes of tubular, white or pale mauve flowers are produced intermittently through the year. Z10–11

PLEIOBLASTUS

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.

P. variegatus, syn. *Arundinaria fortunei, A. variegata* (Dwarf white-stripe bamboo), illus. p.284.

P. viridistriatus, syn. *Arundinaria auricoma*, illus. p.289.

PLEIONE

ORCHIDACEAE

See also ORCHIDS.

P. bulbocodioides (illus. p.466). Deciduous, terrestrial orchid. H 6in (15cm). In spring, usually before a solitary leaf develops, bears pink, rose or magenta flowers, 2–5in (5–12cm) across, with darker purple marks on lips. Leaf is narrowly lance-shaped, 5½in (14cm) long. Often difficult to flower: regular feeding helps to increase pseudobulbs to flowering size. Z10–11

***P.* x *confusa*.** Deciduous, terrestrial orchid. H 6in (15cm). Bears canary-yellow flowers, 2–3in (5–8cm) across, with brown or purple blotches on lips, singly in spring before foliage emerges. Has lance-shaped leaves, 4–7in (10–18cm) long. Does best in an alpine house. Needs partial shade. Z10–11

***P. hookeriana*.** Deciduous, terrestrial orchid. H 3–6in (8–15cm). Lilac-pink, rose or white flowers, 2–3in (5–7cm) across, each with a brown- or purplish-spotted lip, are borne singly in spring with lance-shaped leaves, 2–8in (5–20cm) long. Cultivate as for *P.* x *confusa*. Z10–11

***P. humilis*.** Deciduous, epiphytic or rock-dwelling orchid. H 6in (15cm). In winter, before foliage emerges, white flowers, 3–3½in (7–9cm) across, each with a crimson-spotted lip, are borne singly or in pairs. Lance-shaped leaves are 7–10in (18–25cm) long. Grow as for *P.* x *confusa*. Z10–11

***P. praecox*.** Deciduous, epiphytic or rock-dwelling orchid. H 6in (15cm). Flowers, to 3in (8cm) across, are borne in pairs in fall, after foliage. They are white to rose-purple, with violet marks. Leaves are oblong to lance-shaped and 6–10in (15–25cm) long. Grow as for *P.* x *confusa*. Z10–11

PLEIOSPILOS
Living rock

AIZOACEAE

Genus of solitary or clump-forming, perennial succulents with almost stemless rosettes bearing up to 4 pairs of fleshy, erect leaves, like pieces of granite, each with a flat upper surface and each pair united at the base. Flowers are daisylike. Individual species are very similar, and many are difficult to identify. Frost tender. Needs sun and well-drained soil. Propagate by seed or by division in spring or summer.

P. bolusii illus. p.495.

P. compactus illus. p.495.

PLUMBAGO

PLUMBAGINACEAE

Genus of annuals, perennials, and evergreen shrubs and woody-stemmed, scrambling climbers, grown for their primrose-shaped flowers. Half hardy to frost tender. Grow in full light or partial shade, in fertile, well-drained soil. Water regularly, less when not in full growth. Tie stems to supports. Thin out or spur back all previous year's growth in early spring. Propagate by semiripe cuttings in summer. Whitefly may be a problem.

P. auriculata, syn. *P. capensis* (Cape leadwort), illus. p.205.

***P. capensis*.** See *P. auriculata*.

P. indica, syn. *P. rosea*. Evergreen, spreading shrub or semiclimber. H 6ft (2m), S 3ft (1m). Leaves are ovate to elliptic and mid-green. Has terminal racemes of primrose-shaped, red or pink flowers, 1in (2.5cm) long. These are produced in summer, if hard-pruned annually in spring, or from late winter onward, if left unpruned and trained as a climber. Z10–12 (min. 45°F/7°C)

***P. rosea*.** See *P. indica*.

PLUMERIA
Frangipani, Pagoda tree

APOCYNACEAE

Genus of mainly deciduous, fleshy-branched shrubs and trees, grown for their flowers in summer–fall. Frost tender. Requires full sun and freely draining soil. Water container specimens moderately while in growth, keep dry in winter when leafless. Stem tips may be cut out to induce branching. Propagate by seed or by leafless stem-tip cuttings in late spring. Red spider mite may be a nuisance. ⓘ The milky sap may cause mild stomach upset if ingested.

***P. acuminata*.** See *P. rubra* f. *acutifolia*.

***P. acutifolia*.** See *P. rubra* f. *acutifolia*.

P. rubra illus. p.453. **f. *acutifolia*** (syn. *P. acuminata*, *P. acutifolia*) is a deciduous, spreading, sparsely branched small tree or shrub. H and S 12ft (4m) or more. Lance-shaped to ovate leaves are 8–12in (20–30cm) long. Bears fragrant, yellow-eyed, white flowers, with 5 spreading petals, from summer to fall. Z11–12 (min. 50–55°F/10–13°C).

PODALYRIA

PAPILIONACEAE/LEGUMINOSAE

Genus of evergreen, mainly summer-flowering shrubs, grown for their flowers and overall appearance. Frost tender. Requires full light and fertile, well-drained soil. Water containerized plants moderately, less when not in full growth. Prune, if necessary, after flowering. Propagate by seed in spring or by semiripe cuttings in summer.

P. sericea. Vigorous, rounded shrub. H 18–36in (45–90cm), S 1½–3ft (45–100cm). Has ovate, downy, mid-green leaves and sweet pealike, fragrant, pink flowers in summer. Z10–12 (min. 45˚F/7˚C)

PODOCARPUS

PODOCARPACEAE

See also CONIFERS.

P. andinus. See *Prumnopitys andina*.

P. macrophyllus (usamaki). Erect conifer. H 50ft (15m), S 20–25ft (6–8m). Long, linear leaves are bright green above, glaucous beneath. May be grown as a shrub, H and S 3–6ft (1–2m), and planted in a tub in hot climates. Z7–[a]

P. nivalis (Alpine totara; illus. p.105). Rounded, spreading, shrubby conifer. H and S to 6ft (2m). Has reddish-brown, peeling bark and lance-shaped, sharp-pointed, rigid, dark green leaves. Bears catkinlike, yellow, male flowers and green, conelike, female flowers. Egg-shaped, red fruits follow in fall on female plants. Z7–11

P. salignus illus. p.100.

PODOPHYLLUM

SYN. DYSOSMA

BERBERIDACEAE

Genus of spring-flowering, rhizomatous perennials. Fully to frost hardy; young leaves may be damaged by frost. Prefers partial shade and moist, peaty soil. Propagate by division in spring or by seed in fall. ⓘ All parts of the plants are highly toxic if ingested.

P. emodi. See *Sinopodophyllum hexandrum*.

P. hexandrum. See *Sinopodophyllum hexandrum*.

P. peltatum (American mandrake, May apple). Vigorous, spreading, rhizomatous perennial. H 1½ft (45cm), S 4ft (1.2m). Sometimes brown-mottled, light green leaves, with 3–5 deep lobes, push up through soil, looking like closed umbrellas. Nodding, cup-shaped, white flowers open under the foliage, from mid-spring to early summer. Produces large, fleshy, plumlike, glossy, deep rose-pink fruits in fall. Z3–8

PODRANEA

BIGNONIACEAE

Genus of one species of evergreen, twining climber, grown for its trumpet-shaped, foxglovelike flowers. Frost tender. Grow in full light and any fertile, well-drained soil. Water regularly, less in cold weather. Provide support. Thin out crowded growth in winter or early spring. Propagate by seed in spring or semiripe cuttings in summer.

P. ricasoliana, syn. *Pandorea ricasoliana*, *Tecoma ricasoliana*. Vigorous climber. H 12ft (4m) or more. Leaves have 5–11 lance-shaped to ovate, wavy, deep green leaflets. Loose clusters of fragrant, pink flowers, with darker veins, are borne from spring to fall. Z10–12 (min. 50˚F/10˚C)

Poinciana gilliesii. See *Caesalpinia gilliesii*.

Poinciana pulcherrima. See *Caesalpinia pulcherrima*.

POLEMONIUM

Jacob's ladder

POLEMONIACEAE

Genus of late spring- or summer-flowering annuals and often short-lived perennials. Fully hardy. Prefers sun and fertile, well-drained soil. Propagate by division in spring or by seed in fall.

P. archibaldiae. Robust, bushy, clump-forming perennial. H to 3ft (1m), S 1ft (30cm). Leaves have 21 to 31 lance-shaped leaflets. Erect stems bear clusters of bell-shaped, usually deep violet-blue flowers in late spring, summer, and occasionally early fall. White-flowered forms are usually scented. Z6–10

P. boreale, syn. *P. pulcherrimum*. Vigorous, summer-flowering perennial. H 20in (50cm), S 1ft (30cm). Has bright green leaves divided into leaflets and tubular, purple-blue flowers with throats of yellow or white. Z3–8

P. caeruleum illus. p.270. **BRISE D'ANJOU ('Blanjou')** illus. p.270.

P. carneum illus. p.269.

P. foliosissimum. Vigorous, clump-forming perennial. H 30in (75cm), S 2ft (60cm). Clusters of cup-shaped, lilac flowers, with yellow stamens, are borne in summer at the stem tips, above oblong to lance-shaped, mid-green leaves, each composed of numerous, small leaflets. Z3–8.

var. *flavum*, H 16–28in (40–70cm), bears yellow flowers shaded orange-red outside.

***P.* 'Northern Lights'.** Compact, upright perennial. H 12–16in (30–40cm), S 1ft (30cm). Has finely divided, bright green leaves. From late spring to early fall, produces clusters of fragrant, cup-shaped, pale blue flowers. Z3–8

P. pulcherrimum. See *P. boreale*.

POLIANTHES

ASPARAGACEAE

Genus of tuberous perennials, grown for their fragrant flowers in summer. Half hardy to frost tender. Needs a sheltered site in full sun and well-drained soil. Water well in spring and summer; apply liquid fertilizer every 2 weeks when in growth. Dry off after leaves die down in winter. Propagate by seed or by offsets in spring.

P. geminiflora, syn. *Agave duplicata, Bravoa geminiflora*, illus. p.413.

P. tuberosa, syn. *Agave polianthes* (Tuberose), illus. p.385. **'The Pearl'** is a tuberous perennial. H to 4ft (1.2m), S 6in (15cm). Has a basal cluster of strap-shaped, erect leaves; flower stem also bears leaves on lower part. Produces a spike of funnel-shaped, semidouble or double, white flowers with 6 spreading petals, in summer. Z10–11 (min. 41˚F/5˚C).

POLIOTHYRSIS

SALICACEAE

Genus of one species of deciduous tree, grown for its foliage and flowers. Fully hardy. Grow in sun or partial shade and in fertile, well-drained soil. Propagate by softwood cuttings in summer.

P. sinensis. Deciduous, spreading tree. H 30ft (10m) or more, S 20ft (6m). Has long, ovate, sharply toothed leaves, glossy and dark green, with wine-red stalks. Fragrant, star-shaped, white, later yellow flowers are borne in late summer and early fall. Z6–9

POLYGALA

Milkwort, Snakeroot

POLYGALACEAE

Genus of annuals and evergreen perennials and shrubs, grown mainly for their pealike flowers. Fully hardy to frost tender. Needs full light or partial shade and moist, but sharply drained soil. Water potted specimens freely when in full growth, moderately at other times. Lanky stems may be cut back hard in late winter. Propagate by seed in spring or by semiripe cuttings in late summer. Susceptible to whitefly.

P. calcarea illus. p.370. **'Bulley's Form'** is an evergreen, prostrate perennial. H 1in (2.5cm), S 6in (15cm). Has rosettes of small, narrowly ovate leaves. Bears loose heads of deep blue flowers in late spring and early summer. Prefers humus-rich soil. Z7–9. **'Lillet'** illus. p.369.

P. chamaebuxus illus. p.371.

var. *grandiflora* (syn. *P.c.* var. *purpurea*, *P.c.* var. *rhodoptera*) illus. p.354. **var. *purpurea*** see *P.c.* var. *grandiflora*. **var. *rhodoptera*** see *P.c.* var. *grandiflora*. H4

P.* x *dalmaisiana, syn. *P. myrtifolia* var. *grandiflora* of gardens, illus. p.457.

P. myrtifolia* var. *grandiflora of gardens. See *P.* x *dalmaisiana*.

P. vayredae. Evergreen, mat-forming shrub. H 2–4in (5–10cm), S 8–12in (20–30cm). Slender, prostrate stems bear small, linear leaves. Pealike, yellow-lipped, reddish-purple flowers are borne in late spring and early summer. Suitable for a rock garden or alpine house. Z7–9

POLYGONATUM

Solomon's seal

ASPARAGACEAE

Genus of spring- or early summer-flowering, rhizomatous perennials. Fully hardy to half hardy. Requires a cool, shady situation and fertile, well-drained soil. Propagate by division in early spring or by seed in fall. Sawfly caterpillar is a common pest. ⓘ All parts may cause mild stomach upset if ingested.

P. biflorum, syn. *P. canaliculatum, P. commutatum, P. giganteum*. Arching, rhizomatous perennial. H 16–72in (0.4–2m), S 2ft (60cm). Bears ovate to oblong, mid-green leaves. Pendent clusters of bell-shaped, white flowers are borne in leaf axils during late spring. Z3–8

P. canaliculatum. See *P. biflorum*.

P. commutatum. See *P. biflorum*.

P. giganteum. See *P. biflorum*.

P. hirtum, syn. *P. latifolium*. Upright, then arching, rhizomatous perennial. H 4ft (1.2m), S 2ft (60cm). Clusters of 2–5 drooping, tubular, green-tipped, white flowers open in late spring. Undersides of stems, leaf stalks, and ovate to lance-shaped, mid-green leaves are hairy. Z3–8

P. hookeri illus. p.353.

P.* x *hybridum illus. p.223.

P. latifolium. See *P. hirtum*.

P. multiflorum. Arching, leafy perennial with fleshy rhizomes. H 3ft (90cm), S 10in (25cm). Has ovate to lance-shaped, mid-green leaves. Bears clusters of 2–6 pendent, tubular, green-tipped, white flowers in late spring, then round, black fruits. Z4–8. **'Flore Pleno'** has double flowers that look like ballet dancers' skirts. **'Striatum'** (syn. *P.m.* 'Variegatum'), H 2ft (60cm), has leaves with creamy-white stripes. **'Variegatum'** see *P.m.* 'Striatum'.

P. odoratum. Arching, rhizomatous perennial. H 34in (85cm), S 1ft (30cm). Produces pairs of fragrant, tubular to bell-shaped, green-tipped, white flowers in late spring. Ovate to lance-shaped leaves are mid-green. Z3–8

P. verticillatum (Whorled Solomon's seal). Upright, rhizomatous perennial. H to 32in (80cm), S 1ft (30cm). Bears whorls of stalkless, lance-shaped, mid-green leaves. In early summer, produces narrowly bell-shaped, greenish-white flowers. Z4–8

Polygonum. See *Persicaria* except for: *P. baldschuanicum* for which see *Fallopia baldschuanica*.

POLYPODIUM

POLYPODIACEAE

Genus of deciduous, semievergreen or mostly evergreen ferns, usually epiphytic and sometimes terrestrial, grown for their sculptural fronds. Fully hardy to frost tender. Grow in partial shade and fibrous, moist but well-drained soil. Propagate by division in spring or by spores in late summer.

P. areolatum. See *Phlebodium pseudoaureum*.

P. aureum. See *Phlebodium aureum*.

P. australe. See *P. cambricum*.

P. cambricum, syn. *P. australe, P. vulgare* subsp. *serratum* (Southern polypody). Deciduous, creeping fern. H 6–24in (15–60cm), S indefinite. Has broadly lance-shaped to broadly triangular-ovate, divided, mid-green fronds, to 2ft (60cm) long, with linear or oblong, often toothed pinnae. New fronds develop in late summer and die back by early summer. Sori are conspicuously yellow in winter. Z3–7. **'Richard Kayse'** illus. p.293.

P. glycyrrhiza (Liquorice fern). Terrestrial, evergreen fern. H 1ft (30cm) S indefinite. Has oblong–triangular to narrowly ovate, divided, mid-green fronds, with lance-shaped to oblong pinnae that arise from a licorice-scented rootstock. Z5–8. **'Longicaudatum'** has fronds with very long, pointed tips.

***P. interjectum* 'Cornubiense'.** See *P.* x *mantoniae* 'Cornubiense'.

***P.* x *mantoniae* 'Cornubiense'**, syn. *P. interjectum* 'Cornubiense', *P. vulgare* 'Cornubiense', illus. p.291.

P. pseudoaureum. See *Phlebodium pseudoaureum*.
P. vulgare (Common polypody, Polypody) illus. p.291. **'Cornubiense'** see *P.* x *mantoniae* 'Cornubiense'. **'Cristatum'** is an evergreen, creeping fern. H and S 10–12in (25–30cm). Narrowly lance-shaped, divided, mid-green fronds, with semipendulous, terminal crests, grow from creeping rhizomes covered with copper-brown scales. **subsp. *serratum*** see *P. cambricum*. Z3–6

POLYSCIAS

ARALIACEAE

Genus of evergreen trees and shrubs, grown for their foliage. Sometimes has insignificant flowers in summer, but only on large, mature specimens. Frost tender. Needs partial shade and humus-rich, well-drained soil. Water containerized plants freely when in full growth, moderately at other times. Straggly stems may be cut out in spring. Propagate by seed in spring or by stem-tip or leafless stem-section cuttings in summer. Red spider mite may be a problem.
P. filicifolia (Fern-leaf aralia) illus. p.458. **'Marginata'** is an evergreen, erect, sparsely branched shrub. H 6–8ft (2–2.5m) or more, S 3ft (1m) or more. Has 1ft (30cm) long leaves with many small, ovate to lance-shaped, serrated, bright green leaflets with white edges. Z12 (min. 61°F/16°C)
P. guilfoylei (Geranium aralia). Slow-growing, evergreen, rounded tree. H 12–20ft (4–6m), S 3–8ft (1–2.5m) or more. Leaves are 10–16in (25–40cm) long and divided into ovate to rounded, serrated, deep green leaflets. Z12 (min. 61°F/16°C).
'Victoriae' (Lace aralia) illus. p.458.

POLYSPORA

THEACEAE

Genus of evergreen shrubs and trees, grown for their flowers and overall appearance. Frost hardy to half hardy. Prefers sun or partial shade and humus-rich, acidic soil. Water potted plants moderately, less in winter. Propagate by semiripe cuttings in late summer or by seed when ripe, in fall, or in spring.
P. axillaris, syn. *Gordonia axillaris*. Evergreen, bushy shrub or tree. H 10–12ft (3–4m), S 6–10ft (2–3m), sometimes much more. Has lance-shaped, leathery, glossy leaves, each with a blunt tip, and bears, from fall to spring, saucer-shaped, white flowers. Z9–11

POLYSTICHUM

Holly fern, Shield fern

DRYOPTERIDACEAE

Genus of usually evergreen, sometimes semievergreen or deciduous ferns. Fully hardy to frost tender. Prefers partial shade and moist, but well-drained soil enriched with fibrous organic matter. Remove faded fronds regularly. Propagate species by division in spring or by spores in summer, selected forms by division in spring.

P. acrostichoides. Evergreen fern. H 1½ft (45cm), S 3ft (90cm). Slender, lance-shaped, deep green fronds have small, hollylike pinnae. Excellent for cutting. Z3–9
P. aculeatum (Hard shield fern, Prickly shield fern). Evergreen fern. H 2ft (60cm), S 3ft (90cm). Broadly lance-shaped, yellowish-green, then deep green fronds, with oblong to ovate, spiny-edged, glossy pinnae, are produced on stems often covered in brown scales. Z4–8
P. braunii. Evergreen or semievergreen fern. H 16–32in (40–80cm), S 3ft (90cm). Produces a rosette of spreading to arching, lance-shaped, divided, dark green fronds, to 2ft (60cm) long. Young fronds are densely covered with orange-brown scales when unfurling in spring. Z3–8
P. munitum (Giant holly fern) illus. p.293.
P. polyblepharum (Japanese tassel fern). Evergreen fern. H 24–32in (60–80cm), S 3ft (90cm). Produces "shuttlecocks" of spreading, lance-shaped, divided, shiny, dark green fronds, 12–32in (30–80cm) long, covered with golden hairs when they unfurl. Pinnae lobes are oblong-ovate and have spiny-toothed margins. Z5–8
P. rigens. Evergreen fern. H 16in (40cm), S 2ft (60cm). Has "shuttlecocks" of narrowly ovate-oblong, divided, leathery, harsh-textured, dull green fronds, 1–1½ft (30–45cm) long. Broad, lance-shaped pinnae are divided into ovate, spiny-toothed lobes. Fronds are yellowish-green in spring. Z5–6
P. setiferum (Soft shield fern).
Divisilobum Group illus. p.291.
Plumosodivisilobum Group illus. p.291.
'Pulcherrimum Bevis' illus p.290.
P. tsussimense illus. p.292.

Poncirus trifoliata. See *Citrus trifoliata*.

PONTEDERIA

PONTEDERIACEAE

Genus of deciduous, perennial, marginal water plants, grown for their foliage and flower spikes. Fully to frost hardy. Needs full sun and up to 9in (23cm) depth of water. Remove fading flowers regularly. Propagate in spring by division or by seed.
P. cordata (Pickerel weed) illus. p.441.

POPULUS

Aspen, Cottonwood, Poplar

SALICACEAE

Genus of mainly deciduous trees, grown for their habit, foliage, and very quick growth. Produces catkins in late winter or spring. Female trees produce copious amounts of fluffy, white seeds. Fully hardy. Prefers full sun and needs deep, fertile, moist, but well-drained soil; resents dry soil, apart from *P. alba*, which thrives in coastal gardens. Extensive root systems can undermine foundations, so poplars are unsuitable for planting close to buildings, particularly on clay soil. Propagate by hardwood cuttings in winter. Susceptible to bacterial canker and fungal diseases.
P. alba (Abele, White poplar) illus. p.60. Much confused with the commoner *P.* x *canescens*. **'Raket'** (syn. *P.a.* Rocket) is a narrowly conical, deciduous tree. H 70–130ft (20–40m), S 25ft (8m). Has white, hairy new shoots and ovate to rounded, wavy-margined to maplelike, 5-lobed leaves, dark green above, white-hairy beneath, that turn yellow in fall. In early spring, bears red, male or green, female catkins. Leaves of **'Richardii'**, H 40ft (12m), S 25ft (8m), are golden-yellow above. **Rocket** see *P.a.* 'Raket'. Z3–9
P. balsamifera (Balsam poplar, Tacamahac). Fast-growing, deciduous, upright tree. H 100ft (30m), S 25ft (8m). Has smooth shoots and ovate, glossy, dark green leaves, whitish beneath, strongly balsam-scented when young. In early spring, bears pendent, green catkins. Z3–9
P.* x *canadensis (Canadian poplar). Fast-growing, conical to columnar, deciduous tree. H 80–120ft (25–35m), S 50–80ft (15–25m). Triangular to ovate, scalloped, glossy, bright green leaves turn yellow in fall. In early spring, bears red male or green female catkins. **'Aurea'** (Golden poplar), H 80ft (25m), S 30ft (10m), has golden-yellow leaves in late spring and early summer, later turning yellowish-green. **'Robusta'** illus. p.62. Z4–9
P.* x *candicans of gardens. See *P.* x *jackii*.
P.* x *canescens (Grey poplar) illus. p.60.
P. deltoides (Eastern cottonwood, Necklace poplar). Very fast-growing, deciduous, spreading tree. H 100ft (30m), S 70ft (20m). Has lush growth of broadly ovate to triangular, glossy, bright green leaves. In early spring, bears red male or green female catkins. Z4–9
P.* x *jackii, syn. *P.* x *candicans* of gardens (Balm of Gilead, Ontario poplar). Very fast-growing, deciduous, conical tree. H 80ft (25m), S 50ft (15m). Ovate leaves are dark green and, when young, balsam-scented. Bears green female catkins in early spring. Very susceptible to canker. Z3–9.
'Aurora', H 50ft (15m) or more, S 20ft (6m), has leaves that are heavily but irregularly blotched creamy-white.
P. lasiocarpa (Chinese necklace poplar). Very fast-growing, deciduous, spreading tree. H 70ft (20m), S 40ft (12m). Has stout shoots and very large, heart-shaped, mid-green leaves with red veins, on long, red stalks. Bears stout, drooping, yellow catkins in spring. Z6–9
P. maximowiczii illus. p.61.
P. nigra (Black poplar). Fast-growing, deciduous, spreading tree. H 120ft (35m), S 70ft (20m). Has dark bark. Diamond-shaped, bronze young leaves turn bright green, then yellow in fall. Male trees bear red catkins in mid-spring. Z3–9.
'Italica' (Lombardy poplar) illus. p.63.
P. szechuanica. Very fast-growing, deciduous, conical tree. H to 130ft (40m), S 30ft (10m). Has flaking, pinkish-gray bark and large, heart-shaped, dark green leaves, whitish-green beneath, bronze when young. Bears red male or green female catkins in mid-spring. Z5–9
P. tremula (Common aspen). Vigorous, deciduous, spreading tree. H 70ft (20m), S 30ft (10m). Rounded leaves are bronze-red when young, gray-green when mature, and yellow in fall. Flattened stalks make foliage tremble and rattle in wind. In early spring, bears gray-red male or green female catkins. Z2–5. **'Erecta'**, S 5–10ft (1.5–3m), has an upright habit. **'Pendula'** (Weeping aspen) illus. p.74.
P. trichocarpa (Black cottonwood, Western balsam poplar). Very fast-growing, deciduous, conical tree. H 100ft (30m) or more, S 30ft (10m). Has dense growth of ovate, glossy, dark green leaves with green-veined, white undersides, strongly balsam-scented when young. Foliage turns yellow in fall. In mid-spring, bears red male or green female catkins. Z4–8

PORANA

CONVOLVULACEAE

Genus of evergreen or deciduous, twining climbers, grown for their flowers. Frost tender. Provide full light and fertile, moisture-retentive, well-drained soil. Water freely in full growth, sparingly in cold weather. Stems require support. Thin out evergreen species and cut back deciduous ones to just above ground level in late winter or early spring. Propagate by basal, softwood cuttings in late spring or early summer or by seed in spring.
P. paniculata (Bridal bouquet, Snow creeper). Vigorous, evergreen, twining climber. H 20–30ft (6–10m). Leaves are heart-shaped. Large, loose panicles of small, elder-scented, trumpet-shaped, white flowers are borne from late summer to midwinter. Z10–12 (min. 41°F/5°C)

PORTULACA

Purslane, Rose moss

PORTULACACEAE

Genus of fleshy annuals and a few perennials with showy, cup-shaped, roselike flowers that open in sun and close in shade. Half hardy to frost tender. Needs full light and any well-drained soil. Grow as annuals in a sunny, dry border or in a container. Propagate by seed sown under glass in early spring, or outdoors in late spring. Prone to attack by aphids.
P. grandiflora (Rose moss, sun plant). Slow-growing, partially prostrate annual. H 4–8in (10–20cm), S 6in (15cm). Has lance-shaped, succulent, bright green leaves. In summer, produces shallowly bowl-shaped flowers, 1in (2.5cm) across, with conspicuous stamens, in shades of yellow, red, pink, or white. Z10–11. **Happy Hour Series** are branching, with semidouble flowers in a wide range of colors. Flower well during shorter days. **Happy Hour Series 'Peppermint'** has mottled, pink flowers. **Happy Trails Series**, H 6–9in (15–23cm), S 14–18in (35–45cm), are spreading, and bear semidouble flowers in a wide range of hues, including white, pink, yellow, orange, and red. **Lazy Daze Mixture** are low-growing, dense, and semitrailing, with double flowers in many colors. Good in hanging baskets or as temporary groundcover.

PORTULACARIA

DIDIEREACEAE/PORTULACACEAE

Genus of evergreen or semievergreen, succulent-leaved shrubs, grown for their foliage. Frost tender. Needs full sun and well-drained soil. Water potted plants moderately when in full growth, less at other times. Propagate by semiripe cuttings in summer.
P. afra (Elephant bush) illus. p.457.
f. *foliis-variegatis* see *P.a.* 'Variegata'.
'Variegata' (syn. *P.a.* f. *foliis-variegatis*) is an evergreen or semievergreen, erect shrub with more or less horizontal

branches. H and S 6–10ft (2–3m). Has ovate to rounded, fleshy, cream-edged, bright green leaves. In summer, bears small clusters of tiny, star-shaped, pale pink flowers. Z11–12 (min. 50ºF/10ºC)

POTAMOGETON

POTAMOGETONACEAE

Genus of deciduous, perennial, submerged water plants, grown for their foliage and as oxygenators. Suitable for cold-water pools and aquariums. Fully hardy. Prefers sun. Remove fading foliage and thin plants as necessary. Propagate by stem cuttings in spring or summer.

P. crispus (Curled pondweed) illus. p.442.

P. pectinatus (Fennel-leaved pondweed). Deciduous, perennial, submerged water plant. S 10ft (3m). Has very narrow, linear, green to brownish-green leaves and, in summer, inconspicuous flowers. Suitable for a medium-sized to large pool. Z4–12

POTENTILLA

SYN. COMARUM

Cinquefoil

ROSACEAE

Genus of perennials, deciduous shrubs, and a few annuals and biennials, grown for their clusters of small, flattish to saucer-shaped flowers and their foliage. Tall species—particularly the shrubs—are useful in borders. Dwarf potentillas are good for rock gardens. Fully hardy. Does best in full sun, but flower color is better on orange-, red- and pink-flowered plants if shaded from the hottest sun. Needs well-drained soil. Propagate species by seed in fall; selected perennial forms by division only in spring or fall; shrubs by soft- or greenwood cuttings in summer.

P. alba illus. p.359.

P. arbuscula. See *P. fruticosa* Sulphurascens Group 'Elizabeth'.

***P.* 'Arc-en-ciel'** illus. p.268.

P. argyrophylla. See *P. atrosanguinea* var. *argyrophylla*.

P. atrosanguinea illus. p.269. **var. *argyrophylla*** (syn. *P. argyrophylla*) is a clump-forming perennial. H 1½ft (45cm), S 2ft (60cm). Saucer-shaped, yellow or yellow-orange flowers are produced in profusion from early to late summer above strawberrylike, silvery leaves. Z5–7

P. aurea illus. p.372.

P. crantzii (Alpine cinquefoil). Upright perennial with a thick, woody rootstock. H and S 4–8in (10–20cm). Has wedge-shaped, 5-lobed leaves and, in spring, bears flattish, yellow flowers with orange centers. Good in a rock garden. Z3–8

P. davurica* var. *mandschurica of gardens. See *P. fruticosa* 'Manchu'.

P. eriocarpa illus. p.372.

***P.* 'Etna'.** Clump-forming perennial. H to 1½ft (45cm), S 2ft (60cm). Bears saucer-shaped, maroon flowers above strawberry-like, dark green leaves in midsummer. Z5–9

P. fragiformis. See *P. megalantha*.

P. fruticosa. Deciduous, bushy, dense shrub. H 3ft (1m), S 5ft (1.5). Dark green leaves have 5 to 7 narrowly oblong leaflets. From late spring to mid-fall, produces saucer-shaped, bright yellow flowers. Z3–7. **'Abbotswood'** illus. p.149. **var. *arbuscula*** (syn. *P. arbuscula*), S 4ft (1.2m), bears golden-yellow flowers amid gray-green to silver-gray leaves. **'Beesii'** (syn. *P.* 'Nana Argentea'), H 2ft (60cm), S 4ft (1.2m), is slow-growing and compact, with golden-yellow flowers and silver leaves. **'Daydawn'** illus. p.162. **'Elizabeth'** see *P.f.* Sulphurascens Group 'Elizabeth'. **'Friedrichsenii'** illus. p.160. **'Gold Drop'** (syn. *P. parvifolia* 'Gold Drop'), H and S 4ft (1.2m), bears abundant, golden-yellow flowers amid bright green leaves. **'Goldfinger'** bears large, rich yellow flowers in profusion. **'Jackman's Variety'**, H 4ft (1.2m), has large, bright yellow flowers. **'Maanelys'** (syn. *P.* 'Maanelys', *P.* 'Manelys', *P.* 'Moonlight'), H 4ft (1.2m), S 6ft (2m), has soft yellow flowers and gray-green foliage. **'Manchu'** (syn. *P. davurica* var. *mandschurica* of gardens) has pure white flowers and silvery-gray leaves. **'Red Ace'** illus. p.156. **'Royal Flush'**, H 1½ft (45cm), S 30in (75cm), produces mid-green leaves and sometimes semidouble, yellow-stamened, rich pink flowers, fading to white in full sun. **Sulphurascens Group 'Elizabeth'** (syn. *P. arbuscula, P.f.* 'Elizabeth') illus. p.160. **'Sunset'** illus. p.162. **'Tangerine'**, H 4ft (1.2m), bears yellow flowers, flushed with pale orange-red, amid mid-green leaves. **'Vilmoriniana'** illus. p.159.

***P.* 'Gibson's Scarlet'.** Clump-forming perennial. H 1½ft (45cm), S 2ft (60cm). Bears saucer-shaped, brilliant scarlet flowers from mid- to late summer. Dark green leaves are strawberrylike. Z4–9

***P.* 'Gloire de Nancy'**, syn. *P.* 'Glory of Nancy'. Clump-forming perennial. H 1½ft (45cm), S 2ft (60cm). Bears very large, saucer-shaped, semidouble, orange and coppery-red flowers throughout summer. Has strawberrylike, dark green leaves. Z4–9

***P.* 'Glory of Nancy'.** See *P.* 'Gloire de Nancy'.

P. indica. See *Duchesnea indica*.

***P.* 'Maanelys'.** See *P. fruticosa* 'Maanelys'.

***P.* 'Manelys'.** See *P. fruticosa* 'Maanelys'.

P. megalantha, syn. *P. fragiformis*, illus. p.276.

***P.* 'Monsieur Rouillard'.** Clump-forming perennial. H 1½ft (45cm), S 2ft (60cm). Produces saucer-shaped, double, blood-red flowers in summer above strawberrylike, dark green leaves. Z4–9

***P.* 'Moonlight'.** See *P. fruticosa* 'Maanelys'.

***P.* 'Nana Argentea'.** See *P. fruticosa* 'Beesii'.

***P. nepalensis* 'Miss Willmott'** illus. p.265.

P. nitida. Dense, mat-forming perennial. H 4in (10cm), S 6in (15cm). Has rounded, 3-lobed, silver leaves and, in summer, stems bearing 1–2 rose-pink flowers with dark centers. Often shy-flowering. Suits a rock garden or trough. Z4–9

***P. parvifolia* 'Gold Drop'.** See *P. fruticosa* 'Gold Drop'.

P. recta. Clump-forming, hairy perennial. H 2ft (60cm), S 1½ft (45cm). Has toothed, gray- to mid- green, palmate leaves. From early to late summer, bears pale yellow flowers. Z4–8. **'Macrantha'** see *P.r.* 'Warrenii'. **'Warrenii'** (syn. *P.r.* 'Macrantha') has rich, golden-yellow flowers throughout summer.

P.* x *tonguei. Mat-forming perennial. H 4in (10cm), S 1ft (30cm). Has rounded, 3- or 5-lobed, green leaves. Prostrate branches bear flattish, orange-yellow flowers with red centers during summer. Good for a rock garden. Z5–8

***P.* 'William Rollisson'.** Clump-forming perennial. H 1½ft (45cm), S 2ft (60cm). Has mid-green leaves. From early to late summer, bears saucer-shaped, semidouble, yellow or red-orange flowers with yellow centers and petal backs. Z4–8

***P.* 'Yellow Queen'.** Clump-forming perennial. H 1½ft (45cm), S 2ft (60cm).Has strawberrylike, dark green leaves. Produces bright yellow flowers from early to late summer. Z4–8

PRATIA

CAMPANULACEAE

Genus of prostrate, evergreen perennials grown for their abundant, solitary, star-shaped, 2-lipped, usually white or blue-purple flowers. Fully hardy to frost hardy. Good for groundcover in damp soil; also for a rock garden or in paving, but can be invasive. Grow in fertile, loamy, reliably moist soil in partial or deep shade. Propagate by division at any time.

P. angulata, syn. *Lobelia angulata.* Evergreen, creeping perennial. H 2in (5cm), S 1–2ft (30–60cm). Has small, broadly ovate, dark green leaves. Star-shaped, white flowers, with 5 unevenly spaced petals, are borne in leaf axils in late spring. Round, purplish-red fruits follow in fall. (borderline) Z7–10

P. pedunculata, syn. *Lobelia pedunculata,* illus. p.369.

PRIMULA

Primrose

PRIMULACEAE

Genus of mainly herbaceous perennials, some woody-based and evergreen. All have leaves in basal rosettes and tubular, bell- or primrose-shaped (flat) flowers. In some primulas, the flower stems, leaves, sepals, and, occasionally, sections of the petals are covered with a waxy powder known as farina. There are primulas suitable for almost every type of site: the border, scree garden, rock garden, peat garden, bog garden, pool margin, greenhouse, and alpine house. Some may be difficult to grow, as they dislike winter damp or summer heat. Fully hardy to frost tender. Repot container-grown plants annually. Tidy up fading foliage and deadhead as flowering ceases. Propagate species by seed when fresh or in spring; increase selected forms when dormant, either by division between fall and early spring, or by root cuttings in winter. Propagate auricula primulas by offsets in early spring or early fall. Border cultivars may be prone to slug damage in damp places and to attack by root aphids when grown in very dry conditions or in containers.

Primulas are divided into many different horticultural groups, of which the following are in common use. See also feature panel pp.258–259.

Auricula primulas

These are evergreen primulas, derived from hybrids between *P. auricula* and *P. hirsuta,* producing flat, smooth flowers borne in an umbel on a stem above the foliage. There are 3 main sub-groups: alpine, show, and border.

Alpine Auricula Group. In these, the color of the flower center is strikingly different from that of the petals. They may be either light-centered (white or pale in the center) or gold-centered (yellow or gold in the center). There is no meal or "farina" on either leaves or flowers. Grow in an alpine house or rock garden.

Show Auricula Group have flowers with a distinct circle of white meal or "paste" in the center. Some are self-colored, with one color, which may be red, yellow, blue or violet, from the central paste to the petal margins; edged cultivars have a black ring surrounding the central paste, feathering out to an often green, gray, or white margin; in fancy cultivars, the paste is surrounded by a color other than black, with a green, gray, or white margin. Show Auriculas have white farina on their foliage (except those with green-edged flowers), on their flower eyes and, sometimes, on their petal margins. Grow under glass to protect flowers from rain.

Border Auricula Group are generally robust, garden Auricula primulas, which are often very fragrant. Some have farina on flower stems and leaves. Grow in a mixed or herbaceous border.

Candelabra primulas

These are robust, herbaceous perennials with tubular, flat-faced flowers borne in tiered whorls up tall, sturdy stems. Some are deciduous, dying back to basal buds; others are semievergreen, dying back to reduced rosettes. Grow in moist shade or woodland, especially by streams.

Primrose-Polyanthus primulas

A diverse group of evergreen, semi-evergreen, or deciduous perennial hybrids, derived from *P. vulgaris,* crossed with *P. veris, P. juliae* and other species. They are divided into two main groups:

Primrose Group produce mostly solitary flowers among the leaves. Mainly grown as spring-flowering herbaceous perennials or as biennial, greenhouse-container plants flowering from winter to spring.

Polyanthus Group bear flowers in long-stalked umbels. Usually grown as biennials for bedding, sown in summer to flower in winter and the following spring, or under glass as winter- and spring-flowering container plants.

Cultivation

Primulas have varying cultivation requirements. For ease of reference, these have been grouped as follows:

1—Full sun or partial shade, in moist, but well-drained, humus-rich soil.

2—Partial shade, in deep, humus-rich, moist, neutral to acidic soil.

3—Deep or partial shade, in peaty, gritty, moist but sharply drained, acidic soil. Protect from excessive winter wet.

4—Under glass in an alpine house or frame. Avoid wetting foliage of mealy species and hybrids.

5—Full sun with some midday shade, or partial shade, in moist but sharply drained, gritty, humus-rich and slightly alkaline soil.

6—In a cool or temperate greenhouse, or as a houseplant, in bright, filtered light.

P. allionii (illus. p.257). Rosette-forming, evergreen perennial. H 3–4in (7–10cm), S 8in (20cm). Best grown in an alpine house. Tubular, rose, mauve, or white flowers cover a tight cushion of ovate, gray-green leaves in spring. Cultivation group 4. Z5–8. **'Elizabeth Earle'** has lavender-pink flowers. **'Snowflake'** is vigorous, with large white flowers, sometimes flushed pink at the margins.
P. alpicola (illus. p.259). Compact, rosette-forming perennial. H 20in (50cm), S 1ft (30cm). Produces terminal clusters of pendent, bell-shaped, yellow to white or purple flowers on slender stems in early summer. Mid-green leaves are ovate to lance-shaped. Cultivation group 2. Z5–8. **var. *alpicola*** (syn. *P.a.* var. *luna*) has soft sulphur-yellow flowers. **var. *luna*** see *P.a.* var. *alpicola*.
***P. aurantiaca*.** Small, rosette-forming Candelabra primula. H 1ft (30cm), S 16in (40cm). Tubular, reddish-orange flowers are borne in early summer. Has long, broadly ovate to lance-shaped, coarse, mid-green leaves. Cultivation group 2. Z5–8
P. aureata (illus. p.259). Rosette-forming, evergreen perennial. H 6in (15cm), S 8in (20cm). Bears small umbels of flat, cream to yellow flowers in spring. In summer, ovate, toothed, mid-green leaves have purple-red midribs; in winter, leaves form tight buds covered with whitish farina. Cultivation group 3 or 4. Z7–9
***P. auricula*.** Rosette-forming, evergreen, sometimes white-mealy perennial. H 8in (20cm), S 10in (25cm). Bears fragrant, flat, yellow flowers in large umbels in spring. Ovate, soft, pale green to gray-green leaves are densely covered with white farina. Cultivation group 1, 4 or 5. Z4–9
***P.* Barnhaven Blues Group** (illus. p.258). Vigorous, rosette-forming, evergreen or semievergreen, Primrose Group primulas. H and S 6–8in (15–20cm). Flat flowers in a range of mainly dark blue shades, all with small, yellow eyes, are borne singly on reddish stems in spring. Have long, ovate, slightly purple-tinted, green leaves. Cultivation group 1 or 2. Z5–9
P. beesiana, syn. *P. bulleyana* subsp. *beesiana* (illus. p.258). Rosette-forming, deciduous or semievergreen, Candelabra primula. H and S 2ft (60cm). In summer, stout, white-mealy stems bear whorls of tubular, yellow-eyed, reddish-pink flowers. Has inversely lance-shaped to ovate, toothed, mid-green leaves, with red midribs. Cultivation group 2. Z4–7
***P.* Belarina Series.** Vigorous, rosette-forming, evergreen or semievergreen, Primrose Group primula. H 6in (15cm), S 9in (23cm). Has ovate to lance-shaped, dark green leaves. In late winter and spring, bears flat, fully double flowers with slightly ruffled petals. Cultivation group 1 or 2. Z4–7.
Belarina Cobalt Blue ('Kerbelcob') (illus. p.258) has very dark green leaves and vivid deep blue flowers. **Belarina Pink Ice ('Kerbelpice')** illus. p.303.
***P. bhutanica* 'Sherriff's Variety'**, syn. *P. whitei* 'Sherriff's Variety'. Rosette-forming perennial. H 6in (15cm), S 8in (20cm). Often short-lived. In spring, bears neat umbels of tubular, pale ice-blue to sky-blue flowers, with strongly-toothed petals and greenish-yellow eyes surrounded by a broad white zone. Has ovate to lance-shaped, crinkled, mid-green leaves. Cultivation group 3. Z4–7
***P.* 'Blairside Yellow'** (illus. p.259). Compact, Border Auricula primula. H 4in (10cm), S 8in (20cm). In early spring, bell-shaped, golden-yellow flowers nestle in a rosette of tiny, rounded to ovate, pale green leaves. Cultivation group 2 or 5. Z5–7
***P.* 'Blossom'** (illus. p.257). Vigorous, Alpine Auricula primula. H and S 4in (10cm). Bears profuse, flat, deep crimson to bright red flowers with golden centers in spring. Has ovate, dark green leaves. Good for exhibition. Cultivation group 1 or 4. Z5–7
P. bulleyana (illus. p.259). Rosette-forming, semievergreen, Candelabra primula. H and S 2ft (60cm). Tubular, deep orange flowers are borne in early summer. Leaves are ovate to lance-shaped, toothed and dark green. Cultivation group 2. Z4–7. **subsp. *beesiana*** see *P. beesiana*.
***P. chionantha* subsp. *melanops*.** See *P. melanops*.
***P.* 'Chloë'.** Green-edged, Show Auricula primula. H and S 4in (10cm). In late spring, produces flat, dark-green-edged flowers with a black body color and brilliant white paste centers. Ovate leaves are dark green and have no farina. Good for exhibition. Cultivation group 4. Z5–7
P. chungensis (illus. p.259). Vigorous, rosette-forming, Candelabra primula. H 32in (80cm), S 2ft (60cm). In summer, bears tiered whorls of tubular, orange flowers among ovate to lance-shaped, mid-green leaves. Cultivation group 2. Z5–8
***P. clarkei*.** Small, rosette-forming perennial. H 3in (7cm), S 6in (15cm). In spring, bears flat, rose-pink flowers, with yellow eyes, just above a clump of rounded to ovate, pale green leaves. Cultivation group 2 or 4. Divide in late winter. Z5–7
***P. clusiana*.** Small, rosette-forming, evergreen perennial. H 3in (8cm), S 6in (15cm). In spring, bears umbels of tubular, rose-pink flowers with white eyes. Leaves are ovate, glossy, and mid-green. Cultivation group 4 or 5. Z5–7
***P.* 'Craddock White'** (illus. p.257). Rosette-forming, deciduous or semi-evergreen, Primrose Group primula. H to 5in (12cm), S 10in (25cm). Fragrant, upward-facing, flat, white flowers, with yellow eyes, are borne in spring just above long, ovate, red-veined, dark green leaves. Cultivation group 2. Z4–7
***P.* Crescendo Series.** Rosette-forming, evergreen or semievergreen, Polyanthus Group primula. H and S 8in (20cm). Have inversely ovate, wrinkled, dark green leaves. In spring, produce umbels of flat, yellow-centered flowers. Are usually grown as biennials. Cultivation group 1 or 2. Z4–7.
'Crescendo Bright Red' (illus. p.258) has bright scarlet flowers. **'Crescendo Pink and Rose Shades'** (illus. p.257) has flowers in shades of rich purplish-pink.
***P.* 'David Green'.** Rosette-forming, Primrose Group primula. H 4in (10cm), S 6–8in (15–20cm). In spring, bears flat, bright crimson-purple flowers amid ovate, coarse, mid-green leaves. Cultivation group 1 or 2. Z4–9
***P.* 'Dawn Ansell'** (illus. p.257). Vigorous, evergreen or semievergreen, Primrose Group primula. H 8in (20cm), S 1ft (30cm). Has ovate to lance-shaped, slightly toothed, fresh green leaves. In spring, produces double, white flowers set in an enlarged, leafy green calyx. Cultivation group 2. Z4–9
P. denticulata (Drumstick primula). Robust, rosette-forming perennial. H and S 1½ft (45cm). From early to mid-spring, dense, rounded heads of flat, lilac, purple or pink flowers are borne on tops of stout stems. Mid-green leaves are broadly lance-shaped and toothed. Cultivation group 1 or 2. Z3–9. **var. *alba*** (illus. p.257) bears white flowers.
***P.* 'Don Keefe'** (illus. p.258). Vigorous, rosette-forming, evergreen or semi-evergreen, Polyanthus Group primula. H and S 8in (20cm). Reddish stems bear umbels of flat, slightly wavy flowers in soft orange-red, with tiny, yellow eyes, in spring. Has long, ovate, dark green leaves. Cultivation group 2. Z3–9
***P.* 'Dreamer'.** Rosette-forming, Primrose Group primula. H 3–4in (8–10cm), S 6–8in (15–20cm). Has ovate leaves and, in spring, bears flat flowers in cream, apricot, pink, or rose-pink; all bicolors have darker eyes and yellow centers. Cultivation group 2. Z3–9
***P. edgeworthii*.** See *P. nana*.
P. elatior (Oxlip; illus. p.259). Variable, rosette-forming, evergreen or semi-evergreen perennial. H 1ft (30cm), S 10in (25cm). Has umbels of small, fragrant, tubular, yellow flowers in spring, above neat, ovate to lance-shaped, toothed, mid-green leaves. Cultivation group 1 or 2. Z3–7
***P.* 'Elizabeth Killelay'** (illus. p.258). Vigorous, rosette-forming, evergreen or semievergreen, Polyanthus Group primula. H and S 8in (20cm). Fragrant, small, double, maroon flowers, with yellow eyes and cream-edged petals, are borne in umbels on reddish stems in spring. Has long, ovate, dark green leaves. Cultivation group 2. Z5–8
***P. farinosa*.** Rosette-forming perennial. H and S 10in (25cm). In spring, umbels of tubular, lilac-pink, occasionally white, flowers are borne on short, stout stems. Ovate, toothed, mid-green leaves are densely covered with white farina. Cultivation group 2 or 4. Z3–7
***P. flaccida*.** Lax, rosette-forming, short-lived perennial. H 20in (50cm), S 1ft (30cm). In early summer, each stout stem bears a conical head of pendent, bell-shaped, lavender or violet flowers above narrowly ovate, pale to mid-green leaves. Cultivation group 3 or 4. Z4–7
P. florindae (Giant cowslip) illus. p.445.
P. forrestii (illus. p.259). Rosette-forming, evergreen perennial. H 2ft (60cm), S 1½ft (45cm). Dense umbels of flat, yellow flowers with orange eyes are borne in late spring or early summer. Has ovate, toothed, dark green leaves. Cultivation group 4 or 5. Z6–8
***P.* 'Francisca'** (illus. p.259). Vigorous, rosette-forming, evergreen or semi-evergreen, Polyanthus Group primula. H and S 8in (20cm) In spring, bears umbels of large, flat, slightly ruffled, pale green flowers, each with a large, star-shaped, yellow eye marked with 5 slender, orange streaks. Cultivation group 1, 2, or 5. Z4–7
P. frondosa (illus. p.257). Compact, rosette-forming perennial. H 6in (15cm), S 10in (25cm). Bears umbels of flat, yellow-eyed, lilac-rose to reddish-purple flowers in spring on short stems above neat, ovate, mid-green leaves, densely covered with white farina. Cultivation group 2 or 4. Z3–8
***P.* 'Garryarde Guinevere'.** See *P.* 'Guinevere'.
***P.* 'Gigha'**, syn. *P. vulgaris* 'Gigha White'. Rosette-forming, evergreen or semi-evergreen perennial. H 8in (20cm), S 14in (35cm). Has ovate to lance-shaped, bright green leaves, softly hairy beneath. From early to late spring, produces abundant clusters of yellow-eyed, white flowers. Cultivation group 2. Z4–8
***P.* Gold-laced Group** (illus. p.259). Erect, semievergreen or evergreen, Polyanthus Group primulas. H 10in (25cm), S 1ft (30cm). Bear flat flowers, in various colors, with gold-laced margins, from mid- to late spring. Leaves are ovate and mid-green, sometimes tinged red. Raise annually by seed. Cultivation group 2 or 4. Z4–8
***P. gracilipes*.** Rosette-forming, evergreen or semievergreen perennial. H 4in (10cm), S 8in (20cm). Tubular, purplish-pink flowers with greenish-yellow eyes are borne singly in spring or early summer among ovate, wavy, toothed, mid-green leaves. Cultivation group 3 or 4. Z4–8
***P.* 'Guinevere'**, syn. *P.* 'Garryarde Guinevere' (illus. p.257). Vigorous, rosette-forming, evergreen Polyanthus Group primula. H 5in (12cm), S 10in (25cm). Bears flat, purplish-pink flowers with yellow eyes in spring, among ovate, toothed, bronze-green leaves. Cultivation group 2. Z4–8
***P. hirsuta*.** Rosette-forming, evergreen perennial. H 4in (10cm), S 10in (25cm). Produces small umbels of flat, rose or lilac flowers in spring. Has small, rounded to ovate, sticky, mid-green leaves. Cultivation group 1, 2 or 4. Z4–8
***P.* Husky Series** (illus. p.257). Rosette-forming, evergreen or semievergreen, Primrose Group primulas. H and S 8in (20cm). Have inversely ovate, wrinkled, dark green leaves. In late winter and spring, bear flat, brightly yellow-eyed flowers in 8 colors. Usually grown as biennials. Cultivation group 1 or 2. Z4–8.
***P.* 'Inverewe'** (illus. p.258). Vigorous, rosette-forming, semievergreen, Candelabra primula. H 30in (75cm), S 2ft (60cm). Tubular, bright orange-red flowers are produced in summer on stems coated with white farina. Has ovate to lance-shaped, toothed, coarse, mid-green leaves. Cultivation group 2. Z4–8
***P. ioessa*.** Rosette-forming perennial. H and S 1ft (30cm). Clustered heads of funnel-shaped, pink or pinkish-mauve, or sometimes white, flowers are borne in spring or early summer above ovate to lance-shaped, toothed, mid-green leaves. Cultivation group 2, 3 or 4. Z4–7
***P.* 'Janie Hill'.** Rosette-forming, alpine Auricula. H 4in (10cm), S 6in (15cm). Flat, dark to golden-brown flowers, with golden centers, open in mid- to late spring. Has ovate, mid-green leaves. Useful for exhibition. Cultivation group 4 or 5. Z5–7
***P. japonica*.** Robust, rosette-forming, Candelabra primula. H and S 1½ft (45cm). In early summer produces tubular, deep red flowers on stout stems above ovate to lance-shaped, toothed, coarse, pale green leaves. Cultivation group 2. Z4–9.
'Miller's Crimson' (illus. p.257) has intense crimson flowers. **'Postford White'** (illus. p.257) bears white flowers.
***P.* 'Kerbelpice'.** See *P.* Belarina Series Belarina Pink Ice.
P.* x *kewensis (illus. p.259). Rosette-forming, evergreen perennial. H 1½ft (45cm), S 8in (20cm). In early spring, bears

whorls of fragrant, tubular, bright yellow flowers. Ovate to spoon-shaped, toothed, mid-green leaves are sparsely covered with white farina. Cultivation group 6. Z9–11

***P.* 'Lady Greer'** (illus. p.257). Semi-creeping, rosette-forming, semievergreen, Polyanthus Group primula. H and S 4–6in (10–15cm). Bears umbels of fragrant, funnel-shaped, creamy-yellow flowers in spring. Small, bright green leaves are produced close to the ground. Cultivation group 2. Z4–8

***P.* 'Linda Pope'.** See *P. marginata* 'Linda Pope'.

***P. malacoides*.** Erect, rosette-forming, evergreen perennial, usually grown as an annual. H 1–1½ft (30–45cm), S 8in (20cm). From winter to spring, small, flat, single or double, pale lilac-purple, reddish-pink and white flowers are borne in whorls of decreasing size up slender, softly hairy stems. Leaves are dainty, ovate, slightly frilly-margined, softly downy, and pale green. Cultivation group 6. Z10–11

***P.* 'Margaret Martin'** (illus. p.259). Rosette-forming, Show Auricula primula. H 4in (10cm), S 6in (15cm). Bears flat, gray-edged flowers, with a black body color and white centers, in mid- to late spring. Has spoon-shaped, gray-green leaves covered with white farina. Excellent for exhibition. Cultivation group 4. Z4–8

***P. marginata*.** Rosette-forming, semi-evergreen or evergreen perennial. H 6in (15cm), S 1ft (30cm). In spring, bears clusters of funnel-shaped, blue-lilac flowers above ovate, toothed, mid-green leaves densely covered with white farina. Cultivation group 4 or 5. Z4–8. **'Linda Pope'** (syn. *P.* 'Linda Pope') bears flat, mauve-blue flowers on short stems above ovate, toothed, mid-green leaves covered with white farina.

'Prichard's Variety' has lilac-purple flowers with white eyes.

***P.* 'Mark'** (illus. p.258). Vigorous, Alpine Auricula primula. H and S 4in (10cm). Produces flat, pink flowers, with light yellow centers, in spring. Has ovate, vibrant green leaves. Good for exhibition. Cultivation group 4. Z4–8

***P.* 'Mattehew Yates'** (illus. p.258). Vigorous, double Auricula primula. H and S 5in (12cm). Produces fully double, very dark blackish-red flowers in tight trusses in spring. Leaves are inversely ovate and mid-green with some farina. Good for exhibition. Cultivation group 1 or 4. Z4–8

P. melanops, syn. *P. chionantha* subsp. *melanops*. Rosette-forming perennial. H 14in (35cm), S 20in (50cm). In summer, bears umbels of pendent, narrowly funnel-shaped, deep violet-purple flowers, with black eyes, above strap-shaped, mid-green leaves. Cultivation group 2 or 4. Z4–8

***P.* 'Miss Indigo'**, syn. *P. vulgaris* 'Miss Indigo' (illus. p.258). Vigorous, rosette-forming, evergreen or semievergreen perennial. H 8in (20cm), S 14in (35cm). Has ovate to lance-shaped, toothed, bright green leaves. In spring, produces flat, double, deep rich purple flowers, with creamy-white tips. Cultivation group 2. Z4–8

P. modesta*.** Rosette-forming perennial. H and S 8in (20cm). Dense heads of small, tubular, pinkish-purple flowers are borne on short stems in spring. Rounded to ovate, mid-green leaves are covered with yellow farina. Cultivation group 1 or 4. Z4–8. **var. *fauriae, H and S 2in (5cm), has yellow-eyed, pinkish-purple flowers and leaves covered with white farina.

***P.* 'Moonstone'.** Rosette-forming, border Auricula primula. H 5in (12cm), S 6in (15cm). Rounded, double, whitish- or greenish-yellow flowers are produced in profusion in spring. Leaves are ovate and mid-green. Preferably, grow under glass. Cultivation group 4 or 5. Z4–8

P. nana, syn. *P. edgeworthii*. Rosette-forming perennial. H 4in (10cm), S 6in (15cm). Flat, pale mauve flowers with white eyes are borne singly among ovate, toothed, pale green leaves in spring. Cultivation group 3 or 4. Z3–8

***P. obconica*.** Erect, rosette-forming, evergreen perennial, usually grown as an annual. H 9–16in (23–40cm), S 10in (25cm). Flat, purple, lilac, or white flowers, with yellow eyes, are borne in dense umbels in winter–spring. Ovate, toothed, hairy leaves are pale green. Cultivation group 6. Z10–11

***P.* 'Orb'.** Neat, Show Auricula primula. H and S 4in (10cm). Has spoon-shaped, dark green leaves without farina. Bears flat, dark-green-edged flowers, each with a black body color and a central zone of white paste, from mid- to late spring. Good for exhibition. Cultivation group 4. Z4–8

P. palinuri (illus. p.259). Rosette-forming, evergreen perennial. H and S 1ft (30cm). One-sided clusters of semipendent, narrowly funnel-shaped, yellow flowers are borne on thick stems in early summer. Has rounded to ovate, lightly toothed, thick-textured, powdered, green leaves. Cultivation group 1 or 4; needs full sun. Z4–8

***P. petiolaris*.** Rosette-forming, evergreen perennial. H 4in (10cm), S 8in (20cm). Tubular, purplish-pink flowers, with toothed petals, are borne singly in spring. Has small, ovate, toothed, mid-green leaves. Cultivation group 3 or 4. Z4–8

***P. poissonii*.** Rosette-forming, evergreen perennial. H 18–20in (45–50cm), S 8–10in (20–25cm). Has long, inversely lance-shaped, dark green leaves. Produces 4–5 whorls of tubular, plum-purple flowers, with golden (rarely white) eyes in early and midsummer. Cultivation Group 3. Z5–8

P. polyneura (illus. p.258). Rosette-forming perennial. H and S 1½ft (45cm). Dense heads of tubular, pale rose, rich rose or purple-rose flowers are produced in late spring or early summer. Rounded to ovate, shallowly lobed, downy, soft leaves are mid-green. Cultivation group 2. Z4–8

P. prolifera illus. p.445.

***P.* x *pubescens*.** Vigorous, rosette-forming, evergreen perennial. H to 6in (15cm), S 1ft (30cm). Has obovate to broadly spoon-shaped, white-mealy, usually mid-green leaves. Flat umbels of flowers in white, yellow, pink, red, purple, or brown, are borne very freely in spring. Cultivation group 1 or 4. Z4–8.

'Harlow Car', H 3–4in (7–10cm), has shallowly toothed leaves and large, creamy-white flowers. **'Mrs. J.H. Wilson'** is a rosette-forming, Alpine Auricula primula. H and S 4–6in (10–15cm). Has ovate, grayish-green leaves and small umbels of flat, white-centered, purple flowers.

P. pulverulenta (illus. p.258). Rosette-forming, Candelabra primula. H 3ft (90cm), S 2ft (60cm). In early summer, bears tubular, deep red flowers with purple-red eyes on stems covered with white farina. Has broadly lance-shaped, toothed, coarse, mid-green leaves. Cultivation group 2. Z4–8.

Bartley Hybrids have flowers in shades from pale pink to purple, with darker eyes.

P. reidii*.** Robust, rosette-forming perennial. H 2–6in (5–15cm), S 4–6in (10–15cm). Produces dense clusters of bell-shaped, pure white flowers on slender stems in early summer. Has ovate, hairy, pale green leaves. Cultivation group 3 or 4. Z6–8. **var. *williamsii is more robust and has purplish-blue to pale blue flowers.

***P. rosea*.** Rosette-forming perennial. H and S 8in (20cm). In early spring, bears small clusters of flat, glowing rose-pink flowers on short stems, amid ovate to lance-shaped, mid-green leaves, often bronze-flushed when young. Cultivation group 2. Z4–8

***P.* 'Royal Velvet'.** Vigorous, rosette-forming, Border Auricula primula. H and S 6–8in (15–20cm). Has large, spoon-shaped, pale green leaves. Flat, velvety, blue-tinged, maroon flowers, with frilled petals and large, creamy-yellow centers, are borne in spring. Cultivation group 2 or 5. Z4–5

***P. secundiflora*.** Rosette-forming, semi-evergreen or evergreen perennial. H 2–3ft (60–90cm), S 2ft (60cm). In summer, bears clusters of pendent, funnel-shaped, reddish-purple flowers above lance-shaped, toothed leaves. Cultivation group 2. Z4–8

P. sieboldii (illus. p.258). Rosette-forming perennial. H 1ft (30cm), S 1½ft (45cm). Umbels of flat, white, pink, or purple flowers, with white eyes, open above ovate, round-toothed, downy, soft, pale green leaves in early summer. Cultivation group 2. Z4–8. **'Geisha Girl'** (illus. p.257) bears large, pink flowers with deeply cut petals.

P. sikkimensis (Himalayan cowslip; illus. p.259). Rosette-forming perennial. H 2–3ft (60–90cm), S 2ft (60cm). Pendent clusters of funnel-shaped, yellow flowers are borne in summer. Has rounded to ovate, toothed, pale green leaves. Cultivation group 2. Z4–8

***P. sinensis*.** Erect, rosette-forming, evergreen perennial. H and S 6–8in (15–20cm). Flat, purple, purple-rose, pink, or white flowers, with yellow eyes, are borne in neat whorls in winter and early spring. Mid-green leaves are ovate, toothed, and hairy. Cultivation group 6. Z9–11

***P. sonchifolia*.** Rosette-forming, deciduous perennial. H 2in (5cm), S 1ft (30cm). Produces dense umbels of tubular, blue-purple flowers with white eyes and yellow margins in spring. Leaves are ovate to lance-shaped, toothed, and mid-green. Cultivation group 3 or 4. Z4–8

***P.* Stella Series.** Rosette-forming, evergreen to semievergreen, Polyanthus Group primulas. H to 1ft (30cm). Form sturdy, compact rosettes of ovate, heavily veined, dark green leaves. Upright stems bear flowers in a wide color range, including white, pink, red, yellow, orange, and deep purple, some with contrasting eyes. Cultivation group 1, 2, 4, or 6. Z4–8

***P.* 'Tawny Port'.** Very dwarf, rosette-forming, evergreen or semievergreen, Polyanthus Group primula. H 4–6in (10–15cm), S 6–8in (15–20cm). Bears flat, port-wine-colored flowers on short stems in spring. Rounded to ovate, toothed leaves are reddish-green. Cultivation group 1, 2, or 4. Z4–8

***P.* 'Trouble'** (illus. p.259). Vigorous, Auricula. H and S 5in (12cm). Leaves are broad, inversely ovate, mid-green and irregularly toothed. Fully double flowers, a blend of yellow and pink, result in pale coffee-colored blooms, borne in tight trusses in spring. Cultivation group 1 or 4. Z5–8

P. veris (Cowslip) illus. p.263. **'Katy McSparron'** (illus. p.259) is a rosette-forming, semievergreen perennial. H and S 10in (25cm). In mid- and late spring, bears fully double, deep golden-yellow flowers, each with an enlarged, grayish calyx, above tufts of long, sometimes scalloped, mid-green leaves. Z4–8

P. verticillata (illus. p.259). Rosette-forming perennial. H 8–10in (20–25cm), S 6–8in (15–20cm). Has ovate, toothed, mid-green leaves. Fragrant, bell-shaped, yellow flowers are borne in whorls in spring. Cultivation group 4 or 6. Z9–11

P. vialii (illus. p.257). Rosette-forming, often short-lived perennial. H 1–2ft (30–60cm), S 1ft (30cm). Dense, conical spikes of tubular, bluish-purple and red flowers are produced in late spring. Has lance-shaped, toothed, soft, mid-green leaves. Cultivation group 2. Z5–8

P. vulgaris (Primrose; illus. p.259). Rosette-forming, evergreen or semi-evergreen perennial. H 8in (20cm), S 14in (35cm). Flat, soft yellow flowers, with darker eyes, are borne singly among ovate to lance-shaped, toothed, bright green leaves in spring. Cultivation group 2. Z4–8.

'Alba Plena' (illus. p.257) has double, white flowers. **'Gigha White'** see *P.* 'Gigha'. **'Lilacina Plena'** is vigorous and free-flowering, with fully double, lilac-purple flowers. **'Miss Indigo'** see *P.* 'Miss Indigo'. **subsp. *sibthorpii*** (illus. p.258) has pink or purplish-pink flowers.

***P.* 'Wanda'.** Vigorous, evergreen or semievergreen perennial. H 4–6in (10–15cm), S 12–16in (30–40cm). Has inversely lance-shaped to ovate, purplish-green foliage. In spring, has clusters of solitary, dark claret-red flowers. Thrives in sun or shade. Cultivation group 1 or 2. Z4–8

***P. warshenewskiana*.** Rosette-forming perennial. H 3in (7cm), S 6in (15cm). Tiny, flat, white-eyed, bright pink flowers sit just above spoon-shaped, dark green leaves in early spring. Cultivation group 2 or 4. Divide clumps regularly in late winter before flowering. Z4–8

***P. whitei* 'Sherriff's Variety'.** See *P. bhutanica* 'Sherriff's Variety'.

***P.* 'Woodland Walk'** (illus. p.257) Rosette-forming, evergreen or semi-evergreen, Primrose Group primula. H and S 8in (20cm). Inversely ovate, wrinkled, dark green leaves are tinted with bronze. In late winter and spring, single stems bear flat flowers, from faintly pink-tinted white to vivid pink, with heart-shaped petals edged in darker pink. Cultivation group 2. Z5–9

***P.* 'Yellow Dream'.** Rosette-forming, Polyanthus Group primula. H and S 15–23cm (6–9in). Has ovate, toothed leaves. Bears large, fragrant, bright yellow flowers, with slightly darker yellow centers, in late winter and spring. Cultivation group 2. Z5–9

PRIMULINA

GESNERIACEAE

Genus of evergreen perennials or subshrubs, grown for their flowers. Frost tender. Requires well-drained soil, a fairly

humid atmosphere, and a light position out of direct sunlight. Propagate by tip cuttings in summer or, if available, seed in late winter or spring.
P. dryas, syn. *Chirita sinensis*. Evergreen, stemless, rosetted perennial. H to 6in (15cm), S 10in (25cm) or more. Has ovate, almost fleshy leaves, the corrugated, hairy surfaces usually patterned with silver marks. In spring–summer, clusters of tubular, lavender flowers are held above leaves. Z10–12 (min. 50ºF/10ºC)

PRINSEPIA

ROSACEAE

Genus of deciduous, usually spiny, spring- and early summer-flowering shrubs, grown for their habit, flowers, and fruits. Fully hardy. Needs sun and any not too dry soil. Does well against a warm, sunny wall. Propagate by softwood cuttings in summer or by seed in fall.
P. sinensis. Lax, thorny-branched shrub. H and S 6ft (1.8m). In early spring, bears single or small clusters of small, bright yellow, 5-petaled flowers in the leaf axils, along with narrow, green leaves. Juicy, red, cherrylike, edible fruits follow in late summer. Z4–8

PROBOSCIDEA

PEDALIACEAE

Genus of annuals and perennials. Half hardy. Grow in a sunny, sheltered position and in fertile, well-drained soil. Propagate by seed sown under glass in early spring.
P. fragrans. Moderately fast-growing, upright annual. H to 1½ft (45cm), S to 3ft (90cm). Has rounded, serrated, or lobed leaves. In summer, bears fragrant, bell-shaped, crimson-purple flowers, to 2in (5cm) long. Rounded, horned, brown fruits, 2½in (6cm) long, follow which, if gathered young, may be pickled and eaten. Z10–11
P. jussieui. See *P. louisianica*.
P. louisianica, syn. *P. jussieui*, *P. proboscidea* (Common devil's claw, Common unicorn plant, Ram's horn). Erect to spreading annual. H to 1½ft (45cm), S to 3ft (90cm). Has rounded to ovate, unlobed leaves. In summer, bears funnel-shaped, fragrant, reddish-purple to purple flowers, followed by narrow, crested fruit, to 2½in (6cm) long, with beaklike projections. Z10–11
P. proboscidea. See *P. louisianica*.

PROMETHEUM

CRASSULACEAE

Genus of biennial, monocarpic, or perennial rosette-forming succulents similar to *Rosularia* with spikes of white, pink, or red flowers. Frost hardy to frost tender. Suitable for an alpine house. Propagate by seed in spring or by offsets in summer or early fall.
P. aizoon, syn. *Rosularia aizoon*. Rosette-forming, evergreen perennial. H and S 6in (15cm). Has glandular, hairy, fleshy, narrow, mid-green leaves. In late summer, produces sideshoots with yellow, funnel- to star-shaped flowers. Plants sold under this name often are *P. chrysanthum*, which bears 5–50 flowers at the stem tip. Z10–11
P. sempervivoides, syn. *Sedum sempervivoides*. Evergreen, solitary, basal-rosetted biennial. H 3–4in (8–10cm), S 2in (5cm). Has ovate to strap-shaped, leathery, finely hairy, glaucous green leaves marked red-purple. Bears domed heads of star-shaped, intensely scarlet flowers in summer. Dislikes winter wet. Good in an alpine house. Z9–11

PROSTANTHERA

Mint bush

LAMIACEAE/LABIATAE

Genus of evergreen shrubs, grown for their flowers and mint-scented foliage. Frost hardy to half hardy. Needs full light or partial shade and fertile, well-drained soil. Water potted specimens freely when in full growth, moderately at other times. Cut back leggy stems after flowering. Propagate by seed in spring or by semiripe cuttings in late summer.
P. cuneata illus. p.197.
P. lasianthos. Evergreen, erect shrub. H 6–15ft (2–5m), S 3–10ft (1–3m). Has lance-shaped, aromatic, mid-green leaves. In late spring or early summer, bears branched, terminal panicles of abundant, 2-lipped, purple-tinted, white, or cream flowers. Z9–11
P. ovateifolia illus. p.457. **'Variegata'**, H 6ft (1.8m), S 4–5ft (1.2–1.5m), is a bushy shrub, less vigorous than the species. Has lance-shaped, matte, gray-green leaves margined creamy-yellow and terminal panicles of cup-shaped, purple flowers in late spring and early summer. Z9–11
P. rotundifolia (Round-leaved mint bush) illus. p.138. **var. *rosea*** (syn. *P.r.* 'Chelsea Girl') illus. p.192.

PROSTHECHEA

ORCHIDACEAE

See also ORCHIDS.
P. cochleata, syn. *Encyclia cochleata*. Evergreen, epiphytic orchid for a cool greenhouse. H and S 1½ft (45cm). Has narrowly ovate leaves. Upright spikes of green flowers, 2in (5cm) long, with dark purple lips at the top and ribbonlike sepals and petals, are borne in summer and, on mature plants, intermittently all year. Requires partial shade in summer. Z11–12 (min. 52ºF/11ºC; max. 86ºF/30ºC)
P. radiata, syn. *Encyclia radiata*. Evergreen, epiphytic orchid for a cool greenhouse. H 10in (25cm), S 1ft (30cm). Has narrowly ovate leaves. Bears upright spikes of very fragrant, rounded, small, creamy-white flowers, with red-lined white lips, in summer. Z11–12 (min. 52ºF/11ºC; max. 86ºF/30ºC)

PROTEA

PROTEACEAE

Genus of evergreen shrubs and, rarely, trees, grown mainly for their colorfully bracted flower heads. Difficult to grow. Half hardy. Requires full light and well-drained, neutral to acidic soil, low in phosphates and nitrates. Water container-grown specimens moderately, less when not in full growth. Plants under glass must have plenty of ventilation throughout the year. Prune, if necessary, in early spring. Propagate by seed in spring or by semiripe cuttings in summer.
P. cynaroides (King protea) illus. p.454.
P. eximia. Fairly vigorous, rounded to broadly columnar, large shrub or small tree. H 10–15ft (3–5m), S 6–10ft (2–3m). Sparsely branching stems bear ovate leaves that are purple-flushed, silvery green, and glaucous, sometimes with red margins. In spring and summer, bears oblong to cone-shaped flower heads with red or red-tinted pink bracts, fringed with white hairs. Z10–11
P. grandiceps (Red sugarbush). Erect to spreading shrub. H and S 6ft (2m). Leaves are stalkless, leathery, grayish green, often with red margins. Produces goblet-shaped flowers, with bright coral-pink bracts tipped with white or purple hairs, in summer. Z10–11
P. mellifera. See *P. repens*.
P. neriifolia (Oleander leaf protea) illus. p.454.
P. repens, syn. *P. mellifera* (Sugar bush). Evergreen, ovoid to rounded shrub or small tree. H 6–12ft (2–4m), S 5–10ft (1.5–3m). Mid-green leaves are narrowly oblong to elliptic and tinted blue-gray. From spring to summer, produces cup-shaped, 5in (13cm) long flower heads, with petallike, pink, red, or white bracts. Z10–11

PRUMNOPITYS

PODOCARPACEAE

See also CONIFERS.
P. andina, syn. *Podocarpus andinus* (Plum yew). Conifer with a domed crown on several stems. H 30–70ft (10–20m), S 25ft (8m). Has smooth, gray-brown bark and needlelike, flattened, bluish-green leaves. Bears white-tinged, yellow, male cones and edible, yellowish-white, plumlike fruits. Z7–10

PRUNELLA

Self-heal

LAMIACEAE/LABIATAE

Genus of semievergreen perennials with spreading mats of leaves from which arise short, stubby flower spikes in midsummer. Suits rock gardens. Fully hardy. Grows well in a position in sun or shade and in moist, but well-drained soil. Propagate by division in spring.
P. grandiflora, syn. *P.* x *webbiana*, illus. p.368. **'Loveliness'** is a basal-rosetted, ground-cover perennial. H 4–6in (10–15cm), S 1ft (30cm). Bears whorls of pale purple flowers in terminal spikes on leafy stems in summer. May be invasive; cut old flower stems before they seed. **'Pink Loveliness'** bears terminal spikes of soft pink flowers. Provides good groundcover, but may be invasive. Cut off old flower stems before they produce seed. **'White Loveliness'** has white flowers. H7
P.* x *webbiana. See *P. grandiflora*.

PRUNUS

SYN. AMYGDALUS
Ornamental cherry

ROSACEAE

Genus of deciduous or evergreen shrubs and trees. The trees are grown mainly for their single (5-petaled) to double flowers and fall color; the shrubs for their fall color, bark, flowers, or fruits. All have ovate to oblong leaves. Fully hardy to frost hardy. Evergreen species tolerate sun or shade; deciduous species prefer full sun. Grow all in any but waterlogged soil. Trim deciduous hedges after flowering, evergreen ones in early or mid-spring. Propagate deciduous species by seed in fall, deciduous hybrids and selected forms by softwood cuttings in summer. Increase evergreens by semiripe cuttings in summer. Bullfinches may eat flower buds and foliage may be attacked by aphids, caterpillars, and the fungal disease silver leaf. Flowering cherries are prone to a fungus that causes "witches' brooms" (abnormal, crowded shoots). Some species and cultivars, notably almond (*P. dulcis*) and peach (*P. persica*) cultivars, are grown for their edible fruits. ⓘ Leaves and fruits of most other species may cause severe discomfort if ingested.
***P.* 'Accolade'** illus. p.83.
***P.* 'Amanogawa'** (Sato-zakura Group). Deciduous, upright tree. H 25ft (8m), S 12ft (4m). Bears fragrant, semidouble, pale pink flowers in late spring. Oblong to ovate, taper-pointed, dark green leaves turn orange and red in fall. Z4–9
P. amygdalopersica. See *P.* x *persicoides*.
P. amygdalus. See *P. dulcis*.
***P.* 'Anbri'.** See *P. laurocerasus* ETNA ('Anbri').
P. avium (Gean, Wild cherry) illus. p.67.
'Plena' illus. p.71.
***P.* 'Beni-yutaka'** (Sato-zakura Group), syn. *P.* 'Matsumae-beni-yutaka'. Vigorous, deciduous tree, vase-shaped when young, broadening with age. H and S 25ft (8m). Large, ovate, deep green leaves, greenish-bronze when young, are tinted orange and scarlet in fall. Clusters of deep reddish-pink buds open to large, disk-shaped, semidouble, sugar-pink flowers. Z6–10
P.* x *blireana. Deciduous, spreading shrub or small tree. H and S 12ft (4m). Bears double, pink flowers in mid-spring and has ovate, purple leaves. Z6–8
P. campanulata (Bell-flowered cherry, Formosan cherry). Deciduous, spreading tree. H and S 25ft (8m). Shallowly bell-shaped, deep rose-red flowers are borne from early to mid-spring, before or with ovate, taper-pointed, dark green leaves. Fruits are small, rounded, and reddish. (borderline) Z7–9
P. cerasifera (Cherry plum, Myrobalan). **'Nigra'** illus. p.86. **'Pissardii'** is a deciduous, round-headed tree. H and S 30ft (10m). Small, 5-petaled, pale pink flowers open from early to mid-spring and fade to white. Edible, plumlike, red fruits often follow. Has ovate, red, young leaves turning deeper red, then purple. May be used for hedging. Z6–10
***P.* 'Cheal's Weeping'** of gardens. See *P.* 'Kiku-shidare-zakura'.
***P.* CHOCOLATE ICE** (Sato-zakura Group), syn *P.* 'Matsumae-fuki'. Vigorous, upright, deciduous tree. H 30ft (10m), S 25ft (8m). Forms a rounded crown with age. In mid-spring, bears pendant clusters of single to semidouble, blush-white flowers. Ovate leaves are chocolate-bronze when young, dark green when mature. Z6–10
P.* x *cistena, syn. *P.* x *cistena* 'Crimson Dwarf', illus. p.146.
***P.* 'Collingwood Ingram'.** Seedling of *P.* 'Kursar'. H 22ft (7m), S 8ft (2.5m). Leaves turn orange-red in fall. One of the earliest

cherries to flower in early spring, bears clusters of striking, dark reddish-pink, single flowers on leafless branches. Its stiffly upright habit makes it useful for small gardens. Z4–8

P. davidiana (David's peach). Deciduous, spreading tree. H and S 25ft (8m). Leaves are narrowly ovate and dark green. Saucer-shaped, 5-petaled, white or pale pink flowers are borne on slender shoots in late winter and early spring, but are susceptible to late frosts. Fruits are rounded and reddish. Z4–8

P. dulcis, syn. *P. amygdalus* (Almond). Deciduous, spreading tree. H and S 25ft (8m). Bears bowl-shaped, white or pink flowers on bare shoots in early spring, before the oblong, pointed, toothed, dark green leaves. Egg-shaped, velvety, green fruits each contain an edible nut. Z6–9

***P.* Fragrant Cloud** (Sato-zakura Group), syn. *P.* 'Shizuka'. Deciduous, vigorous, erect tree, broadening with age. H 30ft (10m), S 20ft (6m). Has ovate, long-pointed, toothed, deep green leaves, paler beneath, emerging coppery-bronze. Drooping clusters of semidouble, strongly fragrant, white flowers, developing pinkish centers with age, are borne with the emerging leaves in mid-spring. Z6–10

***P.* 'Fugenzo'** (Sato-zakura Group), syn. *P.* 'Shirofugen', illus. p.83.

***P. glandulosa* 'Alba Plena'** illus. p.145.

'Rosea Plena' see *P.g.* 'Sinensis'.

'Sinensis' (syn. *P.g.* 'Rosea Plena') is a deciduous, rounded, open shrub. H and S 5ft (1.5). Produces double, bright rose-pink flowers in late spring and ovate, mid-green leaves. Flowers best when grown against a warm, sunny wall. Cut back young shoots to within a few buds of old wood after flowering. Z6–9

***P.* 'Hally Jolivette'.** Deciduous, rounded, compact tree. H and S 15ft (5m). Double, white flowers open from pink buds in late spring. Leaves are ovate and dark green. Z6–9

***P.* 'Hanagasa'** (Sato-zakura Group), syn. *P.* 'Matsumae-hanagasa', *P.* Pink Parasol. Deciduous, spreading, vase-shaped tree, almost semiweeping when mature. H 15–20ft (5–6m), S 20–22ft (6–7m). Has ovate, deep green leaves, bronze when young. In mid-spring, as leaves emerge, bears long-stalked, dense clusters of large, semidouble, pale pink flowers beneath the branches. Z6–10

***P.* x *hillieri* 'Spire'.** See *P.* 'Spire'.

***P.* 'Hokusai'** (Sato-zakura Group) illus. p.82.

***P.* 'Ichiyo'** (Sato-zakura Group), syn. *P.* 'Pink Champagne', illus. p.82.

P. incisa (Fuji cherry) illus. p.81.

'Kojo-no-mai', H and S 8ft (2.5m) or more, is upright, slow-growing, and vase-shaped. Leaves are orange-red in fall; light pink buds open to pale blush-white flowers. Z6–10. **'Midori-zakura'** see *P.i.* f. *yamadei*. **'Oshidori'** illus. p.83.

f. *yamadei* (syn. *P.i.* 'Midori-zakura') illus. p.71.

P. jamasakura, syn. *P. serrulata* var. *spontanea* (Hill cherry), illus. p.71.

***P.* 'Kanzan'** (Sato-zakura Group), syn. *P.* 'Sekiyama', illus. p.72.

***P.* 'Kiku-shidare-zakura'** (Sato-zakura Group), syn. *P.* 'Cheal's Weeping' of gardens, illus. p.83.

***P.* 'Kursar'.** Deciduous, spreading tree. H 18ft (5.5m), S 12ft (4m). Bears a profusion of small, 5-petaled, deep pink flowers in early spring. Ovate, dark green leaves turn brilliant orange in fall. Z6–8

P. laurocerasus (Cherry laurel, Laurel). Evergreen, dense, bushy shrub, becoming spreading and open. H 25ft (8m), S 30ft (10m). Has long spikes of small, single, white flowers from mid- to late spring, large, oblong, glossy, bright green leaves, and cherry-shaped, red, then black fruits. Restrict growth by cutting back hard in spring. Z6–8. **Etna ('Anbri')**, syn. *P.* 'Anbri', is upright, compact, and free-flowering, with ovate, glossy, dark green leaves, orange-bronze when young; excellent for hedging. **'Otto Luyken'** illus. p.145. **'Rotundifolia'**, H 15ft (5m), S 10ft (3m), is vigorous and upright, and excellent for hedging. **'Schipkaensis'**, H 6ft (2m), S 10ft (3m), is of elegant, spreading habit, with narrow leaves and freely borne flowers in upright spikes. **'Zabeliana'** illus. p.145.

P. lusitanica (Laurel, Portugal laurel). Evergreen, bushy, dense shrub or spreading tree. H and S to 70ft (20m). Reddish-purple shoots bear ovate, glossy, dark green leaves. In early summer, bears slender spikes of small, fragrant, 5-petaled, white flowers, followed by egg-shaped, fleshy, deep purple fruits. Restrict growth by pruning hard in spring. Z6–9. **subsp. *azorica*** illus. p.119. **'Myrtifolia'**, H and S 15ft (5m), is neat, dense, rounded, or cone-shaped, with smaller, almost ovate leaves; can be used for topiary. **'Variegata'** illus. p.119.

P. maackii (Manchurian cherry) illus. p.74.

***P.* 'Matsumae-beni-yutaka'.** See *P.* 'Beni-yutaka'.

***P.* 'Matsumae-fuki'.** See *P.* Chocolate Ice.

***P.* 'Matsumae-hanagasa'.** See *P.* 'Hanagasa'.

***P.* 'Mount Fuji'.** See *P.* 'Shirotae'.

***P. mume* 'Beni-chidori'** syn. *P.m.* 'Beni-shidore', illus. p.123. **'Omoi-no-mama'** (syn. *P.m.* 'Omoi-no-wac') is a deciduous, spreading shrub. H and S 8ft (2.5m). Fragrant, semidouble, occasionally single, pink-flushed, white flowers wreath young growths in early spring, before broadly ovate, toothed leaves emerge. Sometimes produces edible, apricotlike, yellow fruits. Z2-6

***P.* 'Okame'.** Deciduous, bushy-headed tree. H 30ft (10m), S 25ft (8m). In early spring, bears abundant, 5-petaled, carmine-pink flowers. Ovate, sharply toothed, dark green leaves turn orange-red in fall. Z6–8

P. padus (Bird cherry). Deciduous, spreading tree, conical when young. H 50ft (15m), S 30ft (10m). Bears fragrant, white flowers in pendent spikes in late spring, followed by small, black fruits. Dark green leaves turn yellow in fall. Z3–6. **'Colorata'** illus. p.72. **'Grandiflora'** see *P.p.* 'Watereri'. **'Plena'** has double flowers and ovate, reddish-purple young leaves that mature to dark green and turn red or yellow in fall. **'Watereri'** (syn. *P.p.* 'Grandiflora') illus. p.71.

***P.* 'Pandora'** illus. p.82.

***P. pendula* 'Pendula Rubra'**, syn. *P.* x *subhirtella* 'Pendula Rubra', illus. p.83. **'Stellata'**, syn. *P.* x *subhirtella* 'Stellata', illus. p.83.

P. persica (Peach). Deciduous, spreading tree. H 15ft (5m), S 20ft (6m). Bears bowl-shaped, pink or red flowers in late spring before the lance-shaped, glossy, mid- to dark green leaves emerge. Edible fruits are round, downy, and red-blushed yellow. Prone to peach leaf curl. (borderline) Z5–9

P.* x *persicoides, syn. *P. amygdalopersica*. Deciduous, spreading tree. H and S 22ft (7m). Large, 5-petaled, bright pink flowers open from early to mid-spring, before ovate, glossy, mid-green leaves emerge. The green, then brown fruits are like almonds in shape and taste. Z5–8

***P.* 'Pink Champagne'** see *P.* 'Ichiyo'.

***P.* Pink Parasol.** See *P.* 'Hanagasa'.

***P.* 'Pink Perfection'** illus. p.83.

***P.* 'Pink Shell'** illus. p.84.

***P.* 'Royal Burgundy'.** Deciduous, vigorous, narrowly upright tree, that broadens with age. H 25–30ft (8–10m), S 20–25ft (6–8m). Ovate to elliptic, reddish-black leaves, are deep coppery red when young, turning orange and scarlet-red in fall. Clusters of double, magenta-pink flowers are borne just before or with the leaves in mid-spring. Z5–9

P. sargentii (Sargent cherry) illus. p.77. **'Charles Sargent'**, H to 70ft (20m), S 50ft (15m), is a rounded, deciduous tree with elliptic, dark green leaves that turn scarlet in fall. Bears pale pink flowers before the leaves in mid-spring. Z5–9

***P.* 'Sekiyama'.** See *P.* 'Kanzan'.

P. serotina (Black cherry, Wild rum cherry) illus. p.66.

P. serrula (illus. p.78). Deciduous, round-headed tree. H and S 30ft (10m). Has gleaming, coppery-red bark that peels. In late spring, bears small, 5-petaled, white flowers amid ovate, tapering, toothed, dark green leaves that turn yellow in fall. Fruits are tiny, rounded, and reddish-brown. Z5–6. **'Branklyn'** has very dark, smooth, shiny bark that resembles polished mahogany.

***P. serrulata* var. *spontanea*.** See *P. jamasakura*.

***P.* 'Shimidsu'.** See *P.* 'Shogetsu'.

***P.* 'Shirofugen'.** See *P.* 'Fugenzo'.

***P.* 'Shirotae'** (Sato-zakura Group), syn. *P.* 'Mount Fuji', illus. p.82.

***P.* 'Shizuka'.** See *P.* Fragrant Cloud.

***P.* 'Shogetsu'** (Sato-zakura Group), syn. *P.* 'Shimidsu', illus. p.81.

P. spinosa (Blackthorn, Sloe).**'Purpurea'** illus. p.115.

***P.* 'Spire'**, syn. *P.* x *hillieri* 'Spire', illus. p.82.

P.* x *subhirtella (Spring cherry). Deciduous, spreading tree. H and S 15ft (5m). From early to mid-spring, a profusion of small, 5-petaled, pale pink flowers are borne before ovate, taper-pointed, dark green leaves, which turn yellow in fall. Has small, rounded, reddish-brown fruits. Z6–8. **'Autumnalis'** has semidouble,white flowers, pink in bud, in mild periods in winter.

'Pendula Rubra' see *P. pendula* 'Pendula Rubra'. **'Stellata'** see *P. pendula* 'Stellata'.

***P.* 'Sunset Boulevard'.** Deciduous, vigorous, narrowly upright tree, widening to a vase-shape with age. H 30–50ft (10–15m), S 10–15ft (3–5m). Has broadly ovate to elliptic, toothed, deep green leaves, that emerge coppery bronze and turn to shades of orange, yellow, and red in fall. Clusters of pink buds open to single, pink-centered, white flowers, just before or with leaves in early spring. Z5–9

***P.* 'Taihaku'** (Sato-zakura Group; Great white cherry) illus. p.82.

P. tenella illus. p.146. **'Fire Hill'** is a deciduous, bushy shrub with upright, then spreading branches. H and S 6ft (2m). Narrowly ovate, glossy, dark green leaves are a foil for small, single, very deep pink flowers borne profusely from mid- to late spring. Small, almondlike fruits follow. Z6–8

P. tomentosa (Downy cherry). Bushy, dense, deciduous shrub. H 5ft (1.5), S 6ft (2m). Bears small, 5-petaled, pale pink flowers from early to mid-spring before ovate, downy, dark green leaves emerge. Fruits are round and bright red. Thrives in hot summers. Z5–9

***P. triloba* 'Multiplex'.** Deciduous, bushy, spreading tree or shrub. H and S 12ft (4m). Double, pink flowers are borne in mid-spring. Has ovate, dark green leaves, often 3-lobed, that turn yellow in fall. Does best against a sunny wall. Cut back young shoots to within a few buds of old wood after flowering. H6

***P.* 'Ukon'** (Sato-zakura Group) illus. p.82.

***P.* x *yedoensis* 'Somei-yoshino'** (Tokyo cherry) illus. p.82.

PSEUDERANTHEMUM

ACANTHACEAE

Genus of evergreen perennials, subshrubs, and shrubs, grown mainly for their variegated or colored foliage. Frost tender. Requires partial shade and fertile, well-drained soil. Water containerized plants freely when in full growth, moderately at all other times. Tip prune young plants to promote a bushy habit. Cut leggy plants back hard in spring. Propagate annually or biennially, as a container plant, by greenwood cuttings in spring or summer. Whitefly may sometimes be troublesome.

P. atropurpureum, syn. *Eranthemum atropurpureum*. Evergreen, erect shrub. H 3–5ft (0.9–1.5m), S 12–30in (30–75cm). Has ovate, strongly purple-flushed leaves and, mainly in summer, short spikes of tubular, purple-marked, white flowers. Z11–12 (min. 13˚C/55˚F)

PSEUDOCODON

CAMPANULACEAE

Genus of herbaceous, twining climbers, grown for their open, seemingly 5-petaled flowers. Fully to frost hardy. Needs a position in partial shade, with light, well-drained soil. Train over supports or leave to scramble through other, larger plants. Propagate by seed in fall or spring.

P. convolvulaceus, syn. *Codonopsis convolvulacea*, illus. p.205.

PSEUDOCYDONIA

ROSACEAE

Genus of one species of deciduous or semievergreen, spring-flowering tree or shrub, grown for its peeling bark, cup-shaped flowers and large, edible fruits. Frost hardy, but in cool areas grow

against a warm, sunny wall. Requires a position in full sun and well-drained soil; does well only in hot summers. Propagate by seed in fall.
P. sinensis, syn. *Cydonia sinensis*. Deciduous or semievergreen, spreading shrub or small tree. H and S 20ft (6m). Has decorative, flaking, gray and white bark. Shallowly cup-shaped, pink flowers, borne from mid- to late spring, are followed after hot summers by large, egg-shaped, yellow fruits. Ovate, finely toothed leaves are dark green. Z5–8

Pseudofumaria lutea. See *Corydalis lutea*.
Pseudofumaria alba. See *Corydalis ochroleuca*.
Pseudofumaria ochroleuca. See *Corydalis ochroleuca*.

PSEUDOGYNOXYS
ASTERACEAE/COMPOSITAE

Genus of shrubs and climbers grown for their large, fragrant, yellow and orange, daisylike flowers. Frost tender. Propagate by semiripe cuttings and by layering in summer or by seed in fall.
P. chenopodioides, syn. *Senecio confusus*. Evergreen, woody-stemmed, twining climber. H to 20ft (6m) or more. Has lance-shaped to narrowly ovate, toothed, thick, mid-green leaves. Bears clusters of daisylike, orange-yellow flower heads, aging to orange-red, mainly in summer. Z10–12 (min. 45–50°F/7–10°C).

PSEUDOLARIX
PINACEAE

See also CONIFERS.
P. amabilis, syn. *P. kaempferi* (Golden larch), illus. p.102.
P. kaempferi. See *P. amabilis*.

Pseudolobivia aurea. See *Echinopsis aurea*.
Pseudomuscari azureum. See *Muscari azureum*.

PSEUDOPANAX
SYN. NOTHOPANAX
ARALIACEAE

Genus of evergreen trees and shrubs, grown for their unusual foliage and fruits. Excellent for landscaping and may also be grown in large containers. Insignificant flowers are produced in summer. Frost hardy to frost tender. Grows in sun or partial shade and in fertile, well-drained soil. Propagate by semiripe cuttings in summer or by seed in fall or spring.
P. arboreus. See *Neopanax arboreum*.
P. crassifolius (Lancewood). Evergreen tree, unbranched for many years, then becoming round-headed. H to 50ft (15m), S 6ft (2m). Leathery, dark green leaves are very variable in shape on young trees, but eventually become long, narrow, rigid, and downward-pointing on older specimens. Produces umbels of star-shaped, greenish-white flowers in summer–fall. Female plants bear small, rounded, black fruits. Z9–11
P. ferox illus. p.88.
P. laetus. See *Neopanax laetus*.

PSEUDOSASA
POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
P. japonica, syn. *Arundinaria japonica* (Arrow bamboo, Metake), illus. p.287.

PSEUDOTSUGA
PINACEAE

See also CONIFERS.
P. douglasii. See *P. menziesii*.
P. menziesii, syn. *P. douglasii*, *P. taxifolia* (Douglas fir). Fast-growing, conical conifer. H 80–160ft (25–50m), S 20–30ft (6–10m). Thick, corky, fissured bark is gray-brown. Spirally arranged, aromatic, needlelike, slightly flattened leaves develop from sharply pointed buds and are dark green with white bands beneath. Elliptic cones, 3–4in (8–10cm) long, with projecting bracts, are dull brown. Z4–6. **'Fletcheri'**, H 10ft (3m), S 6–10ft (2–3m), forms a flat-topped shrub. **'Fretsii'**, H 20ft (6m) or more, S 10–12ft (3–4m), is slow-growing, with very short, dull green leaves. **var. *glauca*** (Blue Douglas fir) illus. p.96.
P. taxifolia. See *P. menziesii*.

PSEUDOWINTERA
WINTERACEAE

Genus of evergreen shrubs and trees, grown for their foliage. Frost hardy to frost tender. Needs full light or partial shade and humus-rich, well-drained but moisture-retentive soil, ideally neutral to acidic. Grows best in a sheltered border or woodland situation. Water containerized plants freely when in full growth, only moderately at other times. Pruning is tolerated if needed. Propagate by semiripe cuttings taken in summer or by seed when ripe in fall, or in spring.
P. axillaris, syn. *Drimys axillaris* (Heropito, Pepper-tree). Evergreen, rounded shrub or tree. H and S 10–25ft (3–8m). Has ovate, lustrous, mid-green leaves, blue-gray beneath. Bears tiny, star-shaped, greenish-yellow flowers in spring and summer, followed by bright red fruits. Z9–11
P. colorata, syn. *Drimys colorata*. Bushy, evergreen, spreading shrub. H 3ft (1m), S 5ft (1.5). Has ovate, leathery, pale yellow-green leaves, blotched with pink and narrowly edged with deep red-purple; undersides are bluish-white. Clusters of 2–5 small, star-shaped, greenish-yellow flowers are borne in mid-spring. Provide shelter in all but the mildest areas. Z8–10

PSYCHOPSIS
ORCHIDACEAE

See also ORCHIDS.
P. papilio, syn. *Oncidium papilio* (illus. p.467). Evergreen, epiphytic orchid for a warm greenhouse. H 2ft (60cm). Rich yellow-marked, orange-brown flowers, 3in (8cm) long, are borne singly and in succession on tops of stems in summer. Has ovate, semirigid, mottled leaves, 4–6in (10–15cm) long. Needs good light in summer. Z11–12 (min. 50˚F/10˚C; max. 86˚F/30˚C)

PSYLLIOSTACHYS
Statice
PLUMBAGINACEAE

Genus of annuals grown for their flowers, which are excellent to cut for drying. Frost hardy to half hardy. Grow in sun and fertile, well-drained soil. If required for drying, cut flowers before they are fully open. Propagate by seed sown under glass in early spring. Botrytis and powdery mildew may be troublesome.
P. suworowii, syn. *Limonium suworowii*, *Statice suworowii*. Fairly slow-growing, erect, rosette-forming annual. H 1–1½ft (30–45cm), S to 1ft (30cm). Produces basal, lance-shaped, wavy-margined to slightly lobed, light green leaves. Bears branching spikes of small, tubular, pink to purple flowers in summer and early fall. Z10–11

PTELEA
RUTACEAE

Genus of deciduous trees and shrubs, grown for their strongly scented foliage and fruits. Fully hardy to frost hardy. Needs sun and fertile soil. Grow in a shrub border or use as lawn specimens. Propagate species by softwood cuttings in summer or by seed in spring or fall, selected forms by softwood cuttings only in summer.
P. trifoliata (Hop tree). Deciduous, bushy, spreading tree or shrub. H 15ft (5m), S 20ft (6m). Has aromatic, lustrous, dark green leaves with 3 narrowly ovate leaflets. Clusters of small, star-shaped, green flowers, borne from early to midsummer, are succeeded by clusters of winged, pale green fruits. Z4–9. **'Aurea'** illus. p.138.

PTERIS
Brake
PTERIDACEAE

Genus of deciduous, semievergreen, or evergreen ferns. Frost hardy to frost tender. Tolerates sun or shade. Grow in moist, peaty soil. Remove faded fronds regularly. Propagate by division in spring or by spores in summer.
P. ensiformis (Sword brake). Deciduous or semievergreen fern. H and S 1ft (30cm). Dark green fronds, often grayish-white around the midribs, are coarsely divided into finger-shaped pinnae. Z11–12 (min. 50°F/10°C). **'Arguta'**, H 1½ft (45cm), has deeper green fronds with central, silver-white marks.
P. umbrosa (Jungle brake). Evergreen fern. H to 4ft (1.2m), S 3ft (1m). Has short-creeping, branched rhizomes. Fronds are erect, shining, and dark green with several pairs of narrowly lance-shaped lobes. Z11–12 (min. 50°F/10°C)

PTEROCARYA
Wing nut
JUGLANDACEAE

Genus of deciduous trees, grown for their foliage and catkins. Fully hardy. Needs full sun and any deep, moist but well-drained soil. Remove suckers regularly. Propagate by softwood cuttings in summer, or by suckers or seed, when ripe, in fall.
P. fraxinifolia (Caucasian wing nut). Deciduous, spreading tree. H 80ft (25m), S 70ft (20m). Large, ashlike, glossy, dark green leaves turn yellow in fall. Long green catkins are borne in summer, the females developing winged, green, then brown fruits. Z5–8
P.* x *rehderiana illus. p.65.
P. stenoptera (Chinese wing nut). Deciduous, spreading tree. H 80ft (25m), S 50ft (15m). Ashlike, bright green leaves, each with a winged stalk, turn yellow in fall. Produces long green catkins in summer; the females develop winged, pink-tinged, green fruits. Z6–8. **'Fern Leaf'** has leaflets deeply cut into narrow, sharply toothed lobes.

PTEROCELTIS
ULMACEAE

Genus of one species of deciduous tree, with inconspicuous flowers in summer, grown for its foliage and fruits. Fully hardy. Needs full sun and does best in hot summers. Requires well-drained soil. Propagate by seed in fall.
P. tatarinowii. Deciduous, spreading tree with arching branches. H and S 30ft (10m). Has peeling, gray bark, and ovate, dark green leaves, to 4in (10cm) long, with toothed margins. In fall, bears small, round, green fruits, each with a broad, circular wing. Z5–8

PTEROCEPHALUS
CAPRIFOLIACEAE

Genus of compact, summer-flowering annuals, perennials, and evergreen shrubs, grown for their scabiouslike flower heads and feathery seed heads. Useful for rock gardens. Borderline fully hardy. Requires sun and well-drained soil. Propagate by softwood or semiripe cuttings in summer or by seed in fall. Will self-seed.
P. parnassi. See *P. perennis*.
P. perennis, syn. *P. parnassi*, illus. p.364.

PTEROSTYRAX
STYRACACEAE

Genus of deciduous trees and shrubs, grown for their foliage and fragrant flowers. Fully hardy. Requires sun or partial shade and deep, well-drained, neutral to acidic soil. Propagate by softwood or semiripe cuttings in summer or by seed in fall.
P. hispida (Epaulette tree) illus. p.73.

Ptilotrichum spinosum. See *Alyssum spinosum*.

PUERARIA
PAPILIONACEAE/LEGUMINOSAE

Genus of deciduous, mainly woody-stemmed, deciduous or evergreen, twining climbers. Frost hardy to frost tender. Grow in full sun and in any well-drained soil. Propagate by seed in spring.
P. hirsuta. See *P. montana* var. *lobata*.
P. lobata. See *P. montana* var. *lobata*.
P. montana* var. *lobata, syn. *P. hirsuta*, *P. lobata*, *P. thunbergiana* (Japanese arrowroot, udzu vine). Deciduous, woody-stemmed, twining climber with hairy stems. H to 70ft (20m) or more. Leaves have 3 broadly ovate leaflets. In summer, produces racemes, to 1ft (30cm) long, of small, scented, sweet-pealike, reddish-

purple flowers, followed by long, slender, hairy pods. In cold areas, is best grown as an annual, H to 15ft (5m) or more. Z9–11
***P. thunbergiana*.** See *P. montana* var. *lobata*.

PULMONARIA

Lungwort

BORAGINACEAE

Genus of mainly spring-flowering perennials, some semievergreen or evergreen, with small, overwintering rosettes of leaves. Fully hardy. Prefers shade; grow in any moist but well-drained soil. Propagate by division in spring or fall. See also feature panel p.261.
P. angustifolia (Blue cowslip). Clump-forming, usually deciduous perennial. H 10–12in (25–30cm), S 1½ft (45cm). Has lance-shaped, unspotted, mid-green leaves, 16in (40cm) long. In spring, bears heads of tubular, 5-lobed, boragelike, sometimes pink-tinged, deep blue flowers. Z4–8. **'Azurea'**, H and S 1ft (30cm), has dark green leaves and pinkish buds that open to rich gentian-blue flowers.
***P.* 'Beth's Pink'.** Semievergreen, clump-forming perennial. H 10in (25cm), S 20in (50cm). Has ovate to lance-shaped, hairy, dark green leaves, spotted silvery-white. In early and mid-spring, bears heads of tubular, 5-lobed, boragelike, purplish-pink flowers. Z4–8
***P.* 'Blue Ensign'.** Deciduous, clump-forming perennial. H to 14in (35cm), S to 1½ft (45cm). Has broadly ovate, hairy, dark green leaves. In spring, produces heads of tubular, 5-lobed, boragelike, rich blue flowers. Z4–8
***P.* 'Cotton Cool'.** Semievergreen, clump-forming perennial. H 8–12in (20–30cm), S 20in (50cm). Has narrowly elliptic, hairy, dark green leaves marked almost entirely with silver. In spring, bears heads of tubular, 5-lobed, boragelike, pink flowers that age to blue. Z4–8
***P.* 'Diana Clare'.** Vigorous, clump-forming, semievergreen perennial. H 8–12in (20–30cm), S 1–1½ft (30–45cm). Has elliptic to lance-shaped, silver-green leaves, lightly speckled dark green near the margins. Bears funnel-shaped, violet-blue flowers from late winter to late spring. Z4–8
***P.* 'Excalibur'** (illus. p.261). Vigorous, semievergreen, clump-forming perennial. H 1ft (30cm), S 20in (50cm). Has narrowly lance-shaped, hairy, silver leaves with narrow, green edges. In early and mid-spring, pink buds open to heads of tubular, 5-lobed, boragelike, light blue flowers. Z4–8
***P.* 'Glacier'.** Semievergreen, clump-forming perennial. H 8–12in (20–30cm), S 20in (50cm). Has broadly ovate, hairy, mid-green leaves spotted with silver. In early and mid-spring, bears heads of tubular, 5-lobed, boragelike, pale blue and pale pink flowers. Z4–8
***P.* 'Ice Ballet'.** Vigorous, semievergreen, clump-forming perennial. H 1ft (30cm), S 20in (50cm). Has broadly ovate, hairy, mildew-resistant, mid-green leaves well spotted with silver. In early and mid-spring, bears heads of large, boragelike, tubular, 5-lobed, pure white flowers. Z4–8
***P.* 'Lewis Palmer'** (illus. p.261). Vigorous, semievergreen, clump-forming perennial. H 14in (35cm), S 1½ft (45cm). Has ovate, hairy, silver-spotted, mid-green leaves. In early and mid-spring, heads of tubular, 5-lobed, boragelike, clear blue flowers open from pinkish buds. Z3–8
***P. longifolia*.** Clump-forming, deciduous perennial. H 1ft (30cm), S 1½ft (45cm). Bears very narrowly lance-shaped, dark green leaves, to 1½ft (45cm) long, spotted with silvery-white. Heads of tubular, 5-lobed, boragelike, vivid blue flowers are borne in late spring. H6. **'Bertram Anderson'** has longer, narrower leaves especially well spotted with silver and bears brighter blue flowers.
***P.* 'Margery Fish'** (illus. p.261). Semi-evergreen, clump-forming perennial. H 1ft (30cm), S 20in (50cm). Has narrowly lance-shaped, hairy, mid-green leaves marked heavily with silver. In early spring, heads of tubular, 5-lobed, boragelike, pink flowers gradually turn blue as they age. Z3–8
***P.* 'Mary Mottram'** (illus. p.261). Vigorous, semievergreen, clump-forming perennial. H 14in (35cm), S 20in (50cm). Has ovate, hairy leaves marked heavily with silver, each with a narrow, green margin. In early spring, bears heads of large, tubular, 5-lobed, boragelike, pink and violet flowers. Z3–8
***P.* 'Mawson's Blue'** (illus. p.261). Semi-evergreen, clump-forming perennial. H to 14in (35cm), S to 1½ft (45cm). Has ovate, hairy, mid-green leaves, bronze tinged when young. In early spring, heads of tubular, 5-lobed, boragelike, azure-blue flowers often open before leaves fully develop. Z3–8
***P.* 'Ocupol'.** See *P.* Opal.
***P. officinalis* 'Sissinghurst White'.** See *P.* 'Sissinghurst White'.
***P.* Opal ('Ocupol')** (illus. p.261). Semi-evergreen, clump-forming perennial. H to 14in (35cm), S 1–1½ft (30–45cm). Has ovate, hairy, silver-spotted, mid-green leaves. In spring, heads of tubular, 5-lobed, boragelike, glowing, pale blue flowers open from pink buds. Z3–8
P. rubra (illus. p.261). Evergreen, clump-forming perennial. H to 16in (40cm), S 3ft (90cm). Has ovate, velvety, mid-green leaves. Heads of tubular, 5-lobed, boragelike, brick-red flowers open from late winter to early spring. Z3–8. **'David Ward'** (illus. p.261) has narrow, white-edged, sage-green leaves and pale red flowers; needs a sheltered spot.
P. saccharata (Jerusalem sage). Evergreen, clump-forming perennial. H 1ft (30cm), S 2ft (60cm). Long, elliptic leaves are variably spotted with creamy-white. In spring, bears funnel-shaped flowers, opening pink and turning to blue. Z3–8. **Argentea Group** cultivars have almost completely silver leaves; the flowers open red and age to dark violet. **'Leopard'** has silver-spotted, dark green leaves and reddish-pink flowers that fade to lilac. **'Mrs. Moon'** bears leaves spotted liberally with silver and heads of pinkish-mauve flowers. **'Sissinghurst White'** see *P.* 'Sissinghurst White'.
***P.* 'Sissinghurst White'**, syn. *P. officinalis* 'Sissinghurst White', *P. saccharata* 'Sissinghurst White', illus. p.254.
***P.* 'Trevi Fountain'.** Robust, clump-forming, semievergreen perennial. H 1ft (30cm), S 26in (65cm). Has lance-shaped, silver-spotted, mid-green leaves. In spring, short stalks bear cobalt-blue flowers just above the foliage. Z4–9
***P.* 'Weetwood Blue'.** Usually semi-evergreen, clump-forming perennial. H 8in (20cm), S 20in (50cm). Has lance-shaped, hairy, green leaves occasionally spotted with white. In spring, bears heads of tubular, 5-lobed, boragelike, clear blue flowers that darken as they age. Z3–8

PULSATILLA

RANUNCULACEAE

Genus of perennials, some with over-wintering foliage, grown for their fernlike leaves and often silky-hairy flowers and feathery seed heads. Has fibrous, woody rootstocks. Leaves increase in size after flowering. Good for large rock gardens. Fully hardy. Needs full sun and humus-rich, well-drained soil. Dislikes root disturbance. Propagate by root cuttings in winter or by seed when fresh. ☠ All parts may cause mild stomach upset if ingested, and, in rare instances, contact with the sap may irritate skin.
P. alpina (Alpine pasque flower) illus. p.332. **subsp. *apiifolia*** (syn. *P.a.* subsp. *sulphurea*) is a clump-forming perennial. H 6–12in (15–30cm), S to 4in (10cm). Has feathery, soft green leaves. Bears upright, bell-shaped, soft pale yellow flowers in spring, followed by feathery, silvery seed heads. Z5–8. **subsp. *sulphurea*** see *P.a.* subsp. *apiifolia*.
P. halleri illus. p.334. **subsp. *grandis*** see *P. vulgaris* subsp. *grandis*. **subsp. *slavica*** is a clump-forming, deciduous perennial. H and S to 8in (20cm). In spring, erect stems bear cup-shaped, deep violet-purple flowers above deeply dissected, woolly, mid-green leaves, followed by silvery, silky seed heads. Z5–8
***P. occidentalis*.** Clump-forming perennial. H 8in (20cm), S 6in (15cm). Has finely dissected leaves. In late spring to early summer, solitary, nodding buds develop into erect, goblet-shaped, white flowers, stained blue-violet at the bases outside, sometimes flushed pink. Feathery, silvery seed heads follow. Z5–8
P. vernalis illus. p.349.
P. vulgaris (Pasque flower) illus. p.334. **subsp. *grandis*** (syn. *P. halleri* subsp. *grandis*) is a clump-forming perennial. H 4–8in (10–20cm), S 8in (20cm). Bears large, upright, shallowly bell-shaped, lavender-blue flowers, with bright yellow centers, in spring before the finely divided, downy leaves emerge. Z5–8

PUNICA

Pomegranate

LYTHRACEAE/PUNICACEAE

Genus of deciduous, summer-flowering shrubs and trees, grown for their bright red flowers and yellow to orange-red fruits, which ripen and become edible only in warm climates. Frost hardy. Needs a sheltered, sunny position and well-drained soil. Propagate by seed in spring or by semiripe cuttings in summer.
P. granatum (Pomegranate). Deciduous, rounded shrub or tree. H 20ft (6m), S 15ft (5m). Has narrowly oblong leaves and, in summer, funnel-shaped, bright red flowers, with crumpled petals. Fruits are round and deep yellow to orange. May be grown in a southern or eastern aspect, either free-standing or, in frost-prone climates, against a wall. Z9–11. **var. *nana*** (Dwarf pomegranate) illus. p.340.

PUSCHKINIA

ASPARAGACEAE

Genus of dwarf, *Scilla*-like bulbs, grown for their early spring flowers. Fully hardy. Needs sun or partial shade and humus-rich soil, with grit or sand added to ensure good drainage. Plant in fall. Dies down in summer. Propagate by offsets in late summer or by seed in fall.
***P. libanotica*.** See *P. scilloides* var. *libanotica*.
P. scilloides* var. *libanotica, syn. *P. libanotica* (Striped squill), illus. p.421. **'Alba'** illus. p.415.

PUYA

BROMELIACEAE

Genus of evergreen, rosette-forming perennials (bromeliads), grown for their overall appearance. Frost hardy to frost tender. Requires full light and well-drained soil. Water moderately during the growing season, sparingly at other times. Propagate by seed or by offsets in spring.
***P. alpestris*.** Evergreen perennial with stout, branched, prostrate stems. H to 6ft (2m), S 10ft (3m). Linear, tapering, arching, bright green leaves are fleshy, with hooked, spiny teeth along the edges and dense, white scales beneath. Tubular, deep metallic-blue flowers, aging to purple-red, are borne in stiff, erect panicles in early summer. Z9–11
P. chilensis (illus. p.471). Evergreen, upright perennial with a short, woody stem. H 15ft (5m), S 6ft (2m). Stem is crowned by a dense rosette of linear, tapering, arching, fleshy, gray-green leaves edged with hooked, spiny teeth. In summer, bears erect, branched panicles of tubular, metallic- or greenish-yellow flowers. Z9–11

PYCNOSTACHYS

LAMIACEAE/LABIATAE

Genus of evergreen perennials or soft-stemmed shrubs, grown for their whorled clusters of deep blue flowers. Frost tender. Grow in bright light and fertile, well-drained soil. Propagate by stem cuttings in early summer.
P. dawei illus. p.473.
***P. urticifolia*.** Strong-growing, erect, soft-stemmed shrub with square stems. H 8ft (2.5m), S 4ft (1.2m). Has opposite, narrowly ovate, toothed, hairy, mid-green leaves. Bears whorls of small, tubular, deep blue flowers in racemes in winter. Z11–12 (min. 54˚F/12˚C)

PYRACANTHA

Firethorn

ROSACEAE

Genus of evergreen, spiny, summer-flowering shrubs, grown for their foliage, flowers and fruits. Fully to frost hardy. Requires a sheltered site in sun or partial shade and fertile soil. To produce a compact habit on a plant grown against

a wall, train and cut back long shoots after flowering. Propagate by semiripe cuttings in summer. Susceptible to scab and fireblight. ⓘ The seeds may cause mild stomach upset if ingested.
P. angustifolia. Evergreen, bushy, dense shrub. H and S 10ft (3m). Has narrowly oblong leaves, dark green above, gray beneath. In midsummer, bears clusters of small, 5-petaled, white flowers. Round, orange-yellow fruits follow in fall. Z5–9
P. atalantioides. Vigorous, evergreen shrub, part upright, part arching. H 20ft (6m), S 12ft (4m). Oblong leaves are glossy and dark green. Large clusters of small, 5-petaled, white flowers in spring are followed by round, red fruits in early fall. Z6–9. **'Aurea'** illus. p.118.
***P.* 'Golden Charmer'** illus. p.141.
***P.* 'Orange Glow'.** Evergreen, upright, dense shrub. H and S 10ft (3m). Has oblong, glossy, dark green leaves. Clusters of small, 5-petaled, white flowers, in late spring, are followed by round, orange fruits. Z5–9
P. rogersiana. Evergreen, upright, then arching shrub. H and S 12ft (4m). Leaves are narrowly oblong, glossy and bright green. Produces clusters of small, 5-petaled, white flowers in spring, followed by round, orange, red or yellow fruits. Z5–9. **'Flava'** has yellow berries.
***P.* Saphyr Orange ('Cadange').** Vigorous, erect shrub. H 10ft (3m), S 6ft (2m). Bears narrowly elliptic, toothed, dark green leaves on stiff branches. Small, white flowers are borne in late spring. Dense clusters of shiny, orange berries follow. Resistant to fireblight and scab. Z5–9
***P.* Saphyr Rouge ('Cadrou').** Compact, erect shrub. H 8ft (2.5m), S 5ft (1.5). Has narrowly ovate or elliptic, toothed, dark green leaves on stiff branches. Bears small, white flowers in late spring, followed by dense clusters of orange, later bright red berries. Resistant to fireblight and scab. Z5–9
***P.* 'Teton'.** Vigorous, upright to spreading shrub. H 15ft (5m), S 10ft (3m). Has oblong, wavy-margined, glossy, bright green leaves. Small white flowers are borne in early summer, followed by an abundance of yellow-orange berries. Z5–9

Pyrethropsis hosmariense. See *Rhodanthemum hosmariense*.
Pyrethrum. See *Tanacetum*.

PYROLA
Wintergreen

ERICACEAE

Genus of evergreen, spreading, spring- and summer-flowering perennials, grown for their foliage and flowers. Fully hardy. Needs partial shade, cool conditions, and well-drained, peaty, acidic soil; is best suited to light woodland. Resents disturbance. Propagate by seed in fall or spring or by division in spring.
P. asarifolia. Evergreen, rosette-forming perennial. H 6–10in (15–25cm), S 6in (15cm) or more. Has kidney-shaped, leathery, glossy, light green leaves. Tubular, pale to deep pink flowers are produced in spring. Z4–8
P. rotundifolia (Round-leaved winter-green, Wild lily-of-the-valley). Creeping, evergreen, rosette-forming perennial. H 8in (20cm), S 6in (15cm). Bears rounded, leathery, glossy, mid-green leaves and, in summer, sprays of fragrant, white flowers that resemble lily-of-the-valley. Z4–8

PYROSTEGIA

BIGNONIACEAE

Genus of evergreen, woody-stemmed, tendril climbers, grown for their flowers. Frost tender. Needs full light and fertile, well-drained soil. Water regularly, less in winter. Provide support. Thin stems after flowering. Propagate by semiripe cuttings or layering in summer.
P. ignea. See *P. venusta*.
P. venusta, syn. *P. ignea* (Flame flower, Flame vine, Golden shower), illus. p.464.

PYRUS
Pear

ROSACEAE

Genus of mainly deciduous, spring-flowering trees, grown for their habit, foliage, flowers, and edible fruits (pears). Ornamental pears are best grown as specimen trees on a lawn. Fully hardy. Does best in full sun and needs well-drained soil. Propagate species by seed in fall, cultivars by budding in summer or by grafting in winter. Many species are susceptible to fireblight and scab and, in North America, pear decline.
P. amygdaliformis. Deciduous, spreading tree. H 30ft (10m), S 25ft (8m). Lance-shaped leaves are gray when young, maturing to glossy, dark green. Clusters of 5-petaled, white flowers are produced in mid-spring, and are followed by small, brownish fruits. Z4–8
P. calleryana. Deciduous, broadly conical tree. H and S to 50ft (15m). Ovate, glossy, dark green leaves often turn red in fall. Bears 5-petaled, white flowers from mid- to late spring and small, brownish fruits. May be locally invasive. Z4–9.
'Chanticleer' illus. p.71.
P. communis (Common pear). **'Beech Hill'** is a deciduous, narrowly conical tree. H 30ft (10m), S 22ft (7m). Ovate, glossy, dark green leaves often turn orange and red in fall. From mid- to late spring, bears 5-petaled, white flowers as leaves emerge, followed by small, brownish fruits. Z4–9
P. elaeagrifolia. Deciduous, spreading, thorny tree or large shrub. H and S 10–15ft (3–5m). Has lance-shaped, gray-green leaves. Produces loose clusters of 5-petaled, creamy white flowers in mid-spring, followed by small, pear-shaped, brownish fruits. Z4–8
P. salicifolia. Deciduous, mound-shaped tree with slightly drooping branches. H and S 20–25ft (6–8m). White flowers, with 5 petals, open as willowlike, gray leaves emerge in mid-spring. Pear-shaped fruits are small and brownish-green. Z4–7. **'Pendula'** illus. p.88.

Quamoclit coccinea. See *Ipomoea coccinea*.
Quamoclit lobata. See *Ipomoea lobata*.
Quamoclit pennata. See *Ipomoea quamoclit*.

QUERCUS
Oak

FAGACEAE

Genus of deciduous or evergreen trees and shrubs, grown for their habit, foliage, and, in some deciduous species, fall color. Produces insignificant flowers from late spring to early summer, followed by egg-shaped to rounded, brownish fruits (acorns). Fully to frost hardy. Prefers sun or partial shade and deep, well-drained soil. Except where stated otherwise, will tolerate limestone. Propagate species by seed in fall, selected forms and hybrids by grafting in late winter. May be affected, though not usually seriously, by mildew and various galls, and by oak wilt.
Q. acutissima (Sawtooth oak). Deciduous, round-headed tree. H and S 50ft (15m). Has fissured, corky, ashen-gray to black bark. Sweet-chestnutlike, glossy, dark green leaves, edged with bristle-tipped teeth, that last until late in the year. Z5–9
Q. alba (American white oak) illus. p.66.
Q. canariensis (Algerian oak, Mirbeck's oak) illus. p.62.
Q. castaneifolia (Chestnut-leaved oak) illus. p.64. **'Green Spire'** is a deciduous tree with upright branches. H 80ft (25m) S 30ft (10m). Has rough, corky, brown bark and sharply toothed leaves, glossy dark green above, gray beneath. Z7–9
Q. cerris (Turkey oak). Fast-growing, deciduous, spreading tree of stately habit. H 100ft (30m), S 80ft (25m). Has gray-white bark, splitting into thick plates, and deeply lobed, oblong, glossy, dark green leaves. Thrives on shallow, chalky soil. Z7–10. **'Argenteovariegata'** illus. p.73.
Q. coccifera (ermes oak). Evergreen, bushy, compact tree or shrub with smooth gray bark, cracking with age. H and S 15ft (5m). Hollylike leaves are glossy, dark green, and rigid with spiny margins. Z6–8
Q. coccinea (Scarlet oak) illus. p.65. **'Splendens'** is a deciduous, round-headed tree. H 70ft (20m), S 50ft (15m). Has pale gray-brown bark in scaly plates. Oblong, glossy, mid-green leaves, with deep, toothlike lobes, turn deep scarlet in fall. Prefers acidic soil. Z4–9
***Q.* x *crenata* 'Lucombeana'**, syn. *Q.* x *hispanica* 'Lucombeana', *Q.* x *lucombeana* 'William Lucombe' (Lucombe oak) illus. p.68.
Q. dentata (Daimio oak). Deciduous, rugged, spreading, stout-branched tree. H 50ft (15m), S 30ft (10m). Has fissured brown bark, splitting into scaly plates and ovate, lobed, dark green leaves, 1ft (30cm) or more long. Prefers acidic soil. Z4–8
Q. ellipsoidalis illus. p.65. **'Hemelrijk'**, is a deciduous, spreading tree. H 70ft (20m), S 50ft (15m). Produces deeply lobed, glossy, dark green leaves that reliably turn deep red in fall. Z4–7
Q. frainetto (Hungarian oak) illus. p.64. **'Hungarian Crown'** is a deciduous, compact, upright tree. H 70ft (20m), S 30ft (10m). Has dark gray, rugged bark and many lobed, dark green leaves, turning yellow-brown in fall. Z5–8
Q.* x *heterophylla (Bartram's oak) illus. p.77.
***Q.* x *hispanica* 'Lucombeana'.** See *Q.* x *crenata* 'Lucombeana'.
Q. ilex (Holm oak). Evergreen, round-headed tree with smooth, dark gray bark. H 80ft (25m), S 70ft (20m). Glossy, dark green leaves are silvery-gray when young and very variably shaped, but most often ovate. Thrives on shallow chalk and is excellent for an exposed, coastal site. Z7–10
Q. imbricaria (Shingle oak). Deciduous, spreading tree with smooth, gray-brown bark. H 70ft (20m), S 50ft (15m). Has long, narrow leaves that are yellowish when young, dark green in summer and yellowish-brown in fall. Z5–8
***Q.* x *lucombeana* 'William Lucombe'.** See *Q.* x *crenata* 'Lucombeana'.
Q. macranthera (Caucasian oak) illus. p.61.
Q. macrocarpa (Bur oak) illus. p.75.
Q. marilandica (Black Jack oak) illus. p.75.
Q. myrsinifolia illus. p.80.
Q. nigra (Water oak) illus. p.63.
Q. palustris (Pin oak) illus. p.66.
Q. petraea (Durmast oak, Sessile oak). Deciduous, spreading tree with ridged, gray bark. H 100ft (30m), S 80ft (25m). Has oblong, lobed, leathery, dark green leaves with yellow stalks. Z5–8. **'Columna'** illus. p.63.
Q. phellos (Willow oak) illus. p.67.
Q. pontica (Armenian oak, Pontine oak). Deciduous, sometimes shrubby tree with upright, stout branches and broadly ovate head. H 20ft (6m), S 15ft (5m). Large, ovate, toothed, glossy, bright green leaves turn yellow in fall. Z5–10
Q. robur (Common oak, Pedunculate oak). Deciduous, spreading, rugged tree. H and S 80ft (25m). Has fissured, gray-brown bark and oblong, wavy, lobed, dark green leaves. Z3–8. **'Concordia'** illus. p.72. **Fastigiata Group** illus. p.62. **Fastigiata Group 'oster'** has a very symmetrical, narrow, upright shape.
Q. rubra (Red oak) illus. p.65. **'Aurea'** is a fast-growing, broad-crowned, deciduous tree. H 50ft (15m), S 30ft (10m). Golden yellow young leaves turn green in summer. Prone to burning in strong sunshine. **'Magic Fire'**, H 30ft (10m), S 25ft (8m), is slow growing at first, with reddish young leaves turning light green in summer, golden yellow in fall. Young shoots are orange-red in winter. Z3–8
Q. suber (Cork oak; illus. p.78). Evergreen, round-headed tree. H and S 70ft (20m). Has thick, corky bark and ovate, leathery leaves, glossy, dark green above and grayish beneath. Z8–10
Q.* x *turneri illus. p.68.
Q. velutina (Black oak). Fast-growing, deciduous, spreading tree. H 100ft (30m), S 80ft (25m). Has ridged, dark brown, almost black, bark and large, oblong, lobed, glossy, dark green leaves that turn reddish-brown in fall. Z3–9

Qiongzhuea tumidissinoda. See *Chimonobambusa tumidissinoda*.
Quisqualis indica. See *Combretum indicum*.

R

RAMONDA

GESNERIACEAE

Genus of evergreen perennials, grown for their rosettes of rounded, crinkled, hairy leaves and for their flowers. Useful for rock gardens and peat walls. Fully hardy. Prefers shade and moist soil. Water plants well if they curl in a dry spell. Propagate by rooting offsets in early summer or by leaf cuttings or seed in early fall.

R. myconi, syn. *R. pyrenaica*, illus. p.369.

R. nathaliae. Evergreen, basal-rosetted perennial. H and S 4in (10cm). Has small, pale green leaves and, in late spring and early summer, bears umbels of small, outward-facing, flattish, white or lavender flowers, with yellow anthers. Z6–7

R. pyrenaica. See *R. myconi*.

R. serbica. Evergreen, basal-rosetted perennial. H and S 4in (10cm). Similar to *R. nathaliae*, but bears cup-shaped, lilac-blue flowers with dark violet-blue anthers. May be difficult to grow. Z6–7

RANUNCULUS

Buttercup

RANUNCULACEAE

Genus of annuals, biennials, and perennials, some of which are evergreen or semievergreen, grown mainly for their flowers. Many species grow from a thickened rootstock or a cluster of tubers. Some are invasive. Fully to frost hardy. Requires a sunny or shaded position and moist but well-drained soil. Propagate by seed when fresh or by division in spring or fall. ⓘ Contact with the sap may irritate skin.

R. aconitifolius illus p.223. **'Flore Pleno'** illus. p.230.

R. acris (Meadow buttercup). **'Flore Pleno'** illus. p.276.

R. alpestris (Alpine buttercup) illus. p.349.

R. amplexicaulis. Upright perennial. H 1ft (30cm), S 8in (20cm). Has narrowly ovate, gray-green leaves. In early summer, produces clusters of shallowly cup-shaped, white flowers with yellow anthers. Needs humus-rich soil. Z4–8

R. aquatilis (Water crowfoot). Aquatic annual or usually evergreen perennial. H ½in (1cm), S indefinite. Submerged, branched, slender stems bear dark green leaves with many threadlike segments; floating leaves are kidney-shaped to rounded, deeply divided into 3–7 lobes. In midsummer, produces solitary, bowl- or saucer-shaped, white-based, yellow flowers, on the surface. Z5–8

R. asiaticus (Persian buttercup) illus. p.410. **var. *flavus*** illus. p.412.

***R. bulbosus* 'Speciosus Plenus'** of gardens. See *R. constantinopolitanus* 'Plenus'.

R. bullatus. Clump-forming perennial with thick, fibrous roots. H and S 4in (10cm). Produces fragrant, shallowly cup-shaped, bright yellow flowers in fall. Oblong to ovate, puckered, dark green leaves have sharply toothed tips. Suits an alpine house or rock garden. Z7–9

R. calandrinioides illus. p.346.

***R. constantinopolitanus* 'Plenus'**, syn. *R. bulbosus* 'Speciosus Plenus' of gardens, *R. speciosus* 'Plenus', illus. p.275.

R. crenatus. Semievergreen, rosetted perennial with thick, fibrous roots. H and S to 3in (8cm). Has rounded, toothed, green leaves. In summer, short stems bear 1 or 2 shallowly cup-shaped, white flowers just above foliage. May also be propagated by removing a flower stem at its first joint in summer; rosettes will form and may then be rooted. Rarely sets seed in cultivation. Suits an alpine house or rock garden. Z5–7

R. ficaria. See *Ficaria verna*.

R. glacialis. Hummock-forming perennial with fibrous roots. H 2–10in (5–25cm), S 2in (5cm) or more. Has rounded, deeply lobed, glossy, dark green leaves. In late spring and early summer, bears clusters of shallowly cup-shaped, white or pink flowers. Difficult to grow at low altitudes. Suits a scree or alpine house. Prefers humus-rich, moist, acidic soil that is drier in winter. Slugs may be troublesome. Z3–5

R. gramineus illus. p.345.

R. kocchii. See *Ficaria fascicularis*.

R. lingua illus. p.444. **'Grandiflorus'** is a deciduous, perennial, marginal water plant. H 3ft (1m), S 1ft (30cm). Has stout, pinkish-green stems, lance-shaped, glaucous leaves and, in late spring, bears racemes of large, saucer-shaped, yellow flowers. Z4–9

R. lyallii (Giant buttercup). Evergreen, stout, upright, tufted perennial. H to 3ft (1m), S to 14in (35cm) or more. Has rounded, leathery, dark green leaves, each 6in (15cm) or more across. In summer, bears panicles of large, shallowly cup-shaped, white flowers. Rarely flowers in hot, dry climates. Suitable for an alpine house. Rarely sets seed in cultivation. Z4–9

***R. montanus* 'Molten Gold'.** Clump-forming, compact perennial. H 4in (10cm), S 1ft (30cm). Leaves are rounded and 3-lobed. Flower stems each produce a shallowly cup-shaped, shiny, bright golden-yellow flower in early summer. Useful for a sunny rock garden. Z5–8

***R. speciosus* 'Plenus'.** See *R. constantinopolitanus* 'Plenus'.

RANZANIA

BERBERIDACEAE

Genus of one species of perennial, grown for its unusual appearance as well as its flowers. Ideal for woodland gardens. Hardy to 14ºF (-10ºC), but late frosts may damage new growth. Prefers shade or partial shade and humus-rich, moist soil. Propagate by division in spring or by seed in fall.

R. japonica. Upright perennial. H to 1ft (30cm), S 8in (20cm). Has 3-parted, fresh green leaves and, in early summer, bears small clusters of nodding, shallowly cup-shaped, pale mauve flowers. Z4–8

RAOULIA

ASTERACEAE/COMPOSITAE

Genus of evergreen, mat- or cushion-forming subshrubs or perennials grown for their dense, overlapping foliage. Some species suit alpine houses, others are best in rock gardens. Hardy to about 14ºF (-10ºC) in well-drained soil. Requires sun or partial shade and gritty, moist but well-drained, peaty soil. Propagate by seed when fresh or by division in spring.

R. australis illus. p.376.

R. eximia. Evergreen, cushion-forming perennial. H 2in (5cm), S to 4in (10cm). Has oblong to ovate, overlapping, woolly, gray leaves. In late spring–summer, bears small, rounded heads of yellowish-white flowers. Suits an alpine house. Prefers some shade. Z7–8

R. haastii illus. p.376.

R. hookeri* var. *albosericea illus. p.374.

R. leontopodium. See *Leucogenes leontopodium*.

RAVENALA

STRELITZIACEAE

Genus of one species of evergreen, palmlike tree, grown for its foliage and overall appearance. Related to *Strelitzia*. Frost tender. Requires full light and humus-rich, well-drained soil. Water containerized specimens freely in summer, less in winter or when temperatures are low. Propagate by seed in spring. Red spider mite may be troublesome.

R. madagascariensis (Traveller's tree). Evergreen, upright, fan-shaped tree. H 30–52ft (10–16m), S 10–20ft (3–6m). Bananalike, long-stalked leaves, 10–20ft (3–6m) long, have expanded stalk bases. Groups of boat-shaped spathes with 6-parted, white flowers emerge from the leaf axils in summer. Z12 (min 61–64ºF/16–18ºC)

REBUTIA

CACTACEAE

Genus of mostly dwarf, clump-forming, spherical to columnar, perennial cacti. Produces flowers in profusion from plant bases, usually 2–3 years after raising from seed. Much-ribbed, tuberculate, green stems have short spines. Frost tender. Needs a site in sun or partial shade and well-drained soil. Easy to grow. Propagate by seed in spring or summer.

R. arenacea, syn. *Sulcorebutia arenacea*, illus. p.496.

R. aureiflora. See *R. einsteinii* subsp. *aureiflora*.

***R.* 'Carnival'** illus. p.483.

R. deminuta, syn. *R. spegazziniana*, illus. p.487.

R. einsteinii* subsp. *aureiflora, syn. *R. aureiflora*. Clump-forming, perennial cactus. H 4in (10cm), S 8in (20cm). Dark green stem, often tinged violet-red, has stiff, radial spines and longer, soft, central spines. Bears many yellow, violet or red flowers in late spring. Z10–11 (min. 41ºF/5ºC)

R. fiebrigii, syn. *R. muscula*, illus. p.496.

***R.* 'Jenny'** illus. p.484.

R. krainziana. See *R. minuscula*.

R. marsoneri. See *R. minuscula*.

R. minuscula, syn. *R. krainziana, R. marsoneri, R. senilis, R. violaciflora*, illus. p.486.

R. muscula. See *R. fiebrigii*.

R. neocumingii, syn. *Weingartia neocumingii*. Spherical, perennial cactus. H 8in (20cm), S 4in (10cm). Stem is tuberculate and green. Areoles bear dense clusters of yellow spines, ⅝in (1.5cm) long, some thicker than others, and cup-shaped, orange or yellow flowers, 1¼in (3cm) long, in spring. Z10–11 (min. 41ºF/5ºC)

R. pygmaea, syn. *Lobivia pygmaea*. Clump-forming, columnar, perennial cactus. H 1½in (4cm), S 3in (8cm). Very short, comblike spines are pressed against gray- to purple-green stem. Bears trumpet-shaped, pink to salmon or rose-purple flowers, to ¾in (2cm) across, in spring. Prefers a sunny site. Z10–11 (min. 41ºF/5ºC)

R. rauschii. See *R. steinmannii*.

R. senilis. See *R. minuscula*.

R. spegazziniana. See *R. deminuta*.

R. steinmannii, syn. *R. rauschii, Sulcorebutia rauschii*. Flattened spherical, perennial cactus. H 2in (5cm), S 4in (10cm). Gray-green stem bears very short, comblike, golden or black spines. Bears flattish, deep purple flowers, 1¼in (3cm) across, in spring. Grows better when grafted. Z10–11 (min. 41ºF/5ºC)

R. steinbachii* subsp. *tiraquensis, syn. *R. tiraquensis, Sulcorebutia tiraquensis*, illus. p.487.

R. tiraquensis. See *R. steinbachii* subsp. *tiraquensis*.

R. violaciflora. See *R. minuscula*.

REHDERODENDRON

STYRACACEAE

Genus of deciduous, spring-flowering shrubs and trees, grown for their flowers and fruits. Borderline fully hardy (14ºF/-10ºC) to frost hardy. Requires sun or partial shade, some shelter and fertile, moist, but well-drained, acidic soil. Propagate by semiripe cuttings in summer or by seed in fall.

R. macrocarpum. Deciduous, spreading tree. H 30ft (10m), S 22ft (7m). Young shoots are red. Pendent clusters of lemon-scented, cup-shaped, creamy white flowers are borne in late spring amid oblong, taper-pointed, red-stalked, glossy, dark green leaves. Has cylindrical, woody, red, then brown fruits in fall. Excellent for a woodland garden. Z8–10

REHMANNIA

PLANTAGINACEAE

Genus of spring- and summer-flowering perennials, sometimes grown as biennials. Grown for their large, foxglovelike flowers. Fully hardy to frost hardy. Requires a sunny site and light soil. Propagate by seed in fall or spring or by root cuttings in winter.

R. angulata of gardens. See *R. elata*.

R. elata, syn. *R. angulata* of gardens, illus. p.234.

R. glutinosa. Rosette-forming, sticky, purple-hairy perennial. H 6–12in (15–30cm), S to 1ft (30cm). Leafy shoots bear tubular, purple-veined, pink, red-brown or yellow flowers in late spring and early summer. Has lance-shaped to ovate, toothed, hairy, light green leaves, often red-tinted beneath. Z9–11

REINWARDTIA

LINACEAE

Genus of one species of evergreen subshrub, grown for its flowers. Frost tender. Needs full light or partial shade and fertile, well-drained soil. Water freely

when in growth, moderately at other times. Tip prune young plants to promote branching; cut back hard after flowering. Raise softwood cuttings annually in late spring. Red spider mite may cause problems.
R. indica, syn. *R. trigyna* (Yellow flax), illus. p.459.
R. trigyna. See *R. indica*.

RESEDA
Mignonette
RESEDACEAE

Genus of annuals and biennials with flowers that attract bees and are suitable for cutting. Fully hardy. Grow in a sunny position and in any fertile, well-drained soil. Deadhead regularly to prolong flowering. Propagate by sowing seed outdoors in spring or early fall.
R. odorata (Mignonette) illus. p.300.

RETAMA
PAPILIONACEAE/LEGUMINOSAE

Genus of deciduous shrubs grown for their willowy, dark green or silky gray stems and pealike, white or yellow flowers. Frost hardy. Needs full sun, sharply drained soil, and a sheltered site against a south- or west-facing wall. Propagate from seed in a cold frame or under glass or by semiripe cuttings in summer.
R. monosperma, syn. *Genista monosperma*. Deciduous, almost leafless, graceful, arching shrub. H to 12ft (4m), S 5ft (1.5m). Slender, silky-gray shoots bear clusters of small, very fragrant, white flowers in early spring. Has a few linear leaves, which soon fall. Grow against a south- or west-facing wall. Z9–11

Reynoutria. See *Fallopia*.

RHAMNUS
Buckthorn
RHAMNACEAE

Genus of deciduous or evergreen, usually thorny, shrubs and trees, with inconspicuous flowers, grown mainly for their foliage and fruits. Fully to frost hardy. Requires sun or partial shade and fertile soil. Propagate deciduous species by seed in fall, evergreen species by semiripe cuttings in summer. ⓘ All parts may cause severe discomfort if ingested.
R. alaternus (Italian buckthorn).
'Argenteovariegata' is an evergreen, bushy shrub. H and S 10ft (3m). Has ovate, leathery, glossy, gray-green leaves margined creamy-white. Tiny, yellowish-green flowers are produced from early to midsummer and followed by spherical red, then black fruits. H5
R. imeretina. Deciduous, spreading, open shrub. H 10ft (3m), S 15ft (5m). Stout shoots bear large, broadly oblong, prominently veined, dark green leaves that turn bronze-purple in fall. Small, green flowers are produced in summer. Z6–8

RHAPHIOLEPIS
ROSACEAE

Genus of evergreen shrubs and trees, grown for their foliage and fragrant, apple-blossomlike flowers. Frost hardy to half hardy. In most areas does best against a sunny, sheltered wall; *R. umbellata* is the most hardy. Needs sun and fertile, well-drained soil. Propagate by semiripe cuttings in late summer.
***R.* x *delacourii* 'Coates' Crimson'.** Evergreen, rounded shrub. H 6ft (2m), S 8ft (2.5m). Clusters of fragrant, star-shaped, deep pink flowers, produced in spring or summer, are set off by the ovate, leathery, dark green leaves. Z8–10
R. indica (Indian hawthorn). Evergreen, bushy shrub. H 5ft (1.5m), S 6ft (2m). Produces clusters of fragrant, star-shaped, white flowers, flushed with pink, in spring or early summer amid narrowly lance-shaped, glossy, dark green leaves. Z9–11
R. japonica. See *R. umbellata*.
R. ovata. See *R. umbellata*.
R. umbellata, syn. *R. japonica, R. ovata*, illus. p.150.

RHAPIS
ARECACEAE/PALMAE

Genus of evergreen fan palms, grown for their foliage and overall appearance. May have tiny, yellow flowers in summer. Frost tender. In frost-prone areas, grow in a temperate or warm greenhouse, or as houseplants. In frost-free areas, grow use in a shady border. Needs partial shade and humus-rich, well-drained soil. Water containerized specimens freely when growing, moderately at other times. Propagate by seed, suckers, or division in spring. Susceptible to red spider mite.
R. excelsa, syn. *R. flabelliformis* (Bamboo palm, Slender lady palm), illus. p.458.
R. flabelliformis. See *R. excelsa*.

Rhazya orientalis. See *Amsonia orientalis*.

RHEUM
Rhubarb
POLYGONACEAE

Genus of rhizomatous, often tough or woody, perennials, grown for their foliage and overall appearance. Includes the edible rhubarb and various ornamental plants. Some species are extremely large and require plenty of space. Fully hardy. Prefers sun or partial shade and deep, rich, well-drained soil. Propagate by division in spring or by seed in fall
ⓘ Leaves may cause severe discomfort if ingested.
***R.* 'Ace of Hearts'**, syn. *R.* 'Ace of Spades'. Clump-forming perennial. H to 4ft (1.2m), S 3ft (90cm). Has elongated, heart-shaped, dark green leaves, to 14in (35cm) long, red-veined above, purple-veined beneath. Bears long panicles of numerous, tiny, star-shaped, very pale pink to white flowers in mid- to late summer. Z4–9
***R.* 'Ace of Spades'.** See *R.* 'Ace of Hearts'.
R. nobile. Clump-forming perennial. H to 6ft (2m), S 2ft (60cm). Leaves are oblong to ovate, leathery, basal, mid-green, 2ft (60cm) long. In late summer, produces long stems and conical spikes of large, overlapping, pale cream bracts that hide insignificant green flowers. Z6–9
R. palmatum. Clump-forming perennial. H to 8ft (2.5m), S to 6ft (1.8m). Has 2–2½ft (60–75cm) long, rounded, 5-lobed, mid-green leaves. In early summer, bears broad panicles of small, creamy-green to deep red flowers. Z5–9. **'Atrosanguineum'** illus. p.439. **'Bowles Crimson'** has darker red flowers, and leaves that are crimson beneath. Leaves of **'Hadspen Crimson'** emerge crimson, then turn green in summer; bears carmine-red flowers.

Rhipsalidopsis gaertneri. See *Hatiora gaertneri*.
Rhipsalidopsis rosea. See *Hatiora rosea*.

RHIPSALIS
Mistletoe cactus
CACTACEAE

Genus of mostly epiphytic, perennial cacti with usually pendent, variously formed stems. Small, diurnal flowers are followed by spherical, translucent berries. Frost tender. Needs partial shade and rich, well-drained soil. Prefers 80% relative humidity—higher than for most cacti. Give only occasional, very light watering in winter. Propagate by seed or stem cuttings in spring or summer.
R. capilliformis. See *R. teres*.
R. cereuscula (Coral cactus) illus. p.483.
R. clavata. See *R. gaertneri*.
R. crispata. Bushy, then pendent, perennial cactus. H 2ft (60cm), S indefinite. Has leaflike, elliptic to oblong, pale green stem segments, to 5in (12cm) long, with undulating edges that bear short, funnel-shaped, cream or pale yellow flowers, to ½in (1cm) across, with recurved tips, in winter–spring. Flowers are followed by white, sometimes red-flushed, berries. Z11–12 (min. 45–54°F/7–12°C)
R. floccosa* var. *tucumanensis illus. p.493.
R. gaertneri, syn. *R. clavata, Hatiora clavata*. Pendent, perennial, epiphytic cactus. H 2ft (60cm), S 3ft (1m). Has multi-branched, cylindrical, dark green stems that widen toward tips. Profuse, terminal, bell-shaped, white flowers, ⅝in (1.5cm) across, are produced in late winter and early spring on plants over 1ft (30cm) high. Z11–12 (min. 45–54°F/7–12°C)
R. paradoxa (Chain cactus). Bushy, then pendent, perennial cactus. H 3ft (1m), S indefinite. Triangular, green stems have segments alternately set at different angles. Short, funnel-shaped, white flowers, ¾in (2cm) across, with recurved tips, in winter–spring are followed by red berries. Z11–12 (min. 45–54°F/7–12°C)
R. salicornioides. See *Hatiora salicornioides*.
R. teres, syn. *R. capilliformis*. Pendent, perennial cactus. H 16in (40cm) or more, S 1ft (30cm). Has freely branching, cylindrical, pale green stems. In winter–spring, produces short, funnel-shaped, white flowers, to ½in (1cm) across, with recurved tips, followed by white berries. Z11–12 (min. 45–54°F/7–12°C)
R. warmingiana. See *Lepismium warmingianum*.

RHODANTHE
SYN. ACROCLINIUM
Strawflower
ASTERACEAE/COMPOSITAE

Genus of drought-tolerant subshrubs, annuals, and perennials grown for their daisylike, papery flower heads, which are good for cutting and drying. Half hardy. Grow in sun and in poor, very well-drained soil. Propagate by seed sown outdoors in mid-spring. Aphids may cause problems.
R. chlorocephala* subsp. *rosea, syn. *Acroclinium roseum, Helipterum roseum*, illus. p.303.
R. manglesii, syn. *Helipterum manglesii*. Moderately fast-growing, erect annual. H 2ft (60cm), S 6in (15cm). Has pointed-ovate, grayish-green leaves and bears daisylike, papery, red, pink, or white flower heads, in summer and early fall. Z10–11

RHODANTHEMUM
ASTERACEAE/COMPOSITAE

Genus of mat-forming, often rhizomatous perennials and subshrubs, grown for their solitary, large, daisylike, white flower heads, surrounded by prominent, usually green bracts. Most are hardy to 14°F (-10°C) in well-drained soil. Needs full sun and moderately fertile, very well-drained soil. Propagate by seed in spring or by softwood cuttings in summer.
R. hosmariense, syn. *Chrysanthemum hosmariense, Pyrethropsis hosmariense*, illus. p.332.

RHODIOLA
CRASSULACEAE

Genus of perennials, some dioecious, with thick, fleshy rhizomes producing scaly, brown basal leaves and stiffly erect stems that bear triangular-ovate to lance-shaped, fleshy, gray-green leaves. Star-shaped flowers have prominent stamens, and may be unisexual or bisexual. Good for a rock garden or the front of a border. Fully hardy. Grow in full sun and moderately fertile soil. Propagate by seed in spring or fall, divide rhizomes in spring or early summer or take leaf cuttings in summer.
R. heterodonta, syn. *Sedum heterodontum, S. rosea* var. *heterodontum*, illus. p.268.
R. rosea, syn. *Sedum rosea* (Roseroot). Clump-forming perennial. H 2–12in (5–30cm), S 8in (20cm). Stems are clothed with ovate to inversely lance-shaped, toothed, fleshy, glaucous leaves. In late spring or early summer, pink buds on dense, terminal heads open to small, star-shaped, greenish-, yellowish- or purplish-white flowers. Z4–8

Rhodocactus grandifolius. See *Pereskia grandifolia*.

RHODOCHITON
PLANTAGINACEAE

Genus of deciduous, perennial climbers, grown for their unusual flowers, which have pendent, long-tubed corollas, with 5 rounded segments, and inflated calyces. Best when grown as an annual. May be planted against fences and trellises or used as groundcover. Frost tender. Grow in sun and in any well-drained soil. Propagate by seed in early spring.
R. atrosanguineus, syn. *R. volubilis*, illus. p.203.
R. volubilis. See *R. atrosanguineus*.

RHODODENDRON

Azalea, rhododendron

ERICACEAE

Large genus of over 1,000 species of evergreen, semievergreen, or deciduous shrubs, ranging in habit from dwarf to treelike, and grown mainly for their spectacular, sometimes strongly scented flowers. Fully hardy to frost tender. Most prefer dappled shade, but a considerable number tolerate full sun, especially in cool climates. Need neutral to acidic soil—ideally, humus-rich and well-drained. Shallow planting is essential, as plants are surface-rooting. Deadhead spent flowers, wherever practical, to encourage energy into growth rather than seed production. Propagate by layering or semiripe cuttings in late summer. Yellowing leaves are usually caused by poor drainage, excessively deep planting, or lime in soil. Weevils and powdery mildew may also cause problems. ⓘ The nectar of some rhododendron flowers may cause severe discomfort if ingested. See also feature panel pp.124–25.

Rhododendrons and azaleas

The genus *Rhododendron* includes not only evergreen, large-leaved and frequently large-flowered species and hybrids, but also dwarf, smaller-leaved shrubs, both evergreen and deciduous, with few-flowered clusters of usually small blooms. "Azalea" is the common name given to the deciduous species and hybrids, as well as to a group of compact, evergreen shrubs derived mainly from Japanese species. They are valued for their abundant, small, colorful blooms produced in late spring. Many of the evergreen azaleas (sometimes known as Belgian azaleas) may also be grown as house plants. Botanically, however, all are classified as *Rhododendron*. The flowers are usually single, but may be semidouble or double, including hose-in-hose (one flower tube inside the other). Unless otherwise stated below, flowers are single and leaves mid- to dark green and ovate.

***R. aberconwayi*.** Evergreen, distinctly erect rhododendron. H to 8ft (2.5m), S 4ft (1.2m). Has small, broadly lance-shaped, rigid, deep green leaves. Bears saucer-shaped, white flowers in late spring. Z5–9

***R. albrechtii*.** Deciduous, upright, bushy azalea. H to 10ft (3m), S 6ft (2m). Has spoon-shaped leaves, clustered at branch tips, and, in spring, bears loose clusters of 3–5 bell-shaped, green-spotted, purple or pink flowers. Z6–8

***R.* 'Alison Johnstone'.** Evergreen, bushy, compact rhododendron. H and S 6ft (2m). Produces an abundance of exquisite, bell-shaped, peach-pink flowers in spring and has waxy, gray-green leaves. Z7–9

***R.* 'Angelo'.** Evergreen, bushy rhododendron. H and S to 12ft (4m). Has bold foliage and large, fragrant, funnel-shaped, pinkish-white flowers in midsummer. Good in light woodland. Z7–9

R. arboreum (illus. p.125). Evergreen, treelike rhododendron. H to 40ft (12m), S 10ft (3m). Undersides of broadly lance-shaped leaves are silver, fawn, or cinnamon. In spring, produces dense clusters of bell-shaped flowers in colors ranging from red (most tender form) through pink to white. Z4–8

***R. argyrophyllum*.** Evergreen, spreading rhododendron. H and S to 15ft (5m). Oblong leaves are silvery-white on undersides. Loose trusses of bell-shaped, rich pink flowers, sometimes with deeper colored spots, are borne in spring. Ideal for a light woodland. Z5–9

R. arizelum, syn. *R. rex* subsp. *arizelum*. Evergreen, bushy rhododendron. H and S 25ft (8m). Has deep green obovate leaves with cinnamon undersides. Flowers are usually yellow, sometimes pink, rarely white, with crimson-marked throats. Z5–8

***R.* 'Ascot Brilliant'.** Evergreen, bushy rhododendron. H and S 10ft (3m). Leaves are broadly ovate. In spring, produces loose trusses of funnel-shaped, waxy, rose-red blooms with darker edges. Z5–9

R. augustinii (illus. p.125). Evergreen, bushy rhododendron. H and S to 12ft (4m). Has small, lance-shaped to oblong, light green leaves and, in spring, bears an abundance of multi-stemmed, widely funnel-shaped, pale to deep blue or lavender flowers. Z6–10

***R. auriculatum*.** Evergreen, bushy, widely branching rhododendron. H and S to 20ft (6m). Has large, oblong, hairy leaves with distinct, earlike lobes at their base. In late summer, bears loose trusses of 7–15 large, heavily scented, tubular to funnel-shaped, white flowers. Best in light woodland. Z5–9

***R.* 'Azor'.** Evergreen, upright rhododendron. H and S to 12ft (4m). Leaves are broadly ovate. Especially valuable as it produces large, fragrant, funnel-shaped, salmon-pink flowers in midsummer. Z5–9

***R.* 'Azuma-kagami'.** Evergreen, compact azalea. H and S 4ft (1.2m). Bears many small, hose-in-hose, deep pink flowers in mid-spring. Best in partial shade. Z5–9

***R. barbatum*.** Evergreen, upright rhododendron. H and S to 30ft (10m). Bears lance-shaped, dark green leaves covered with bristles, on stems; bark is plum-colored and peeling. Bears tight trusses of tubular to bell-shaped, bright scarlet flowers in early spring. Z5–9

***R.* 'Beauty of Littleworth'.** Evergreen, open, shrubby rhododendron. H and S 12ft (4m). In late spring, bears large, conical trusses of scented, funnel-shaped, crimson-spotted, white flowers. Z8–9

***R.* 'Beefeater'.** Evergreen, bushy rhododendron. H and S to 8ft (2.5m). Leaves are broadly lance-shaped. Produces striking, flat-topped trusses of bell-shaped, scarlet flowers in late spring and early summer. Z5–9

***R.* 'Blaauw's Pink'** (illus. p.125). Evergreen, compact azalea. H and S 5ft (1.5m). In late spring, bears abundant, hose-in-hose, salmon-pink flowers, with a paler blush. Z8–10

***R.* 'Blue Danube'** (illus. p.125). Evergreen, upright azalea. H 6ft (2m), S 5ft (1.5m). Produces bell-shaped, vivid violet-blue flowers in spring. Z9–11

***R.* 'Blue Diamond'.** Evergreen, upright rhododendron. H and S to 5ft (1.5m). Small, neat leaves contrast with funnel-shaped, bright purplish-blue flowers borne in mid- to late spring. Prefers full sun. Z6–8

***R.* 'Blue Peter'** (illus. p.125). Evergreen, bushy rhododendron. H and S to 12ft (4m). In early summer, produces bold, open funnel-shaped, 2-tone lavender-purple flowers, with frilled petal margins. Z6–8

R. calendulaceum (Flame azalea). Deciduous, bushy azalea. H and S 6–10ft (2–3m). In early summer, bears funnel-shaped, scarlet or orange flowers in trusses of 5–7. Z6–8

***R. calophytum*.** Evergreen, widely branched rhododendron. H and S to 20ft (6m). Produces large, lance-shaped leaves and, in early spring, large trusses of bell-shaped, white or pale pink flowers, with crimson spots. Z5–9

***R. calostrotum*.** Evergreen, compact rhododendron. H and to 3ft (1m). Has small blue-green leaves and, in late spring, bears saucer-shaped, purple or scarlet flowers in clusters of 2–5. Z6–8

***R.* 'Catawbiense Album'.** Evergreen, rounded rhododendron. H and S to 10ft (3m). Bears glossy leaves and, in early summer, dense, rounded trusses of bell-shaped, white flowers. Z4–8

***R.* 'Catawbiense Boursault'.** Evergreen, rounded rhododendron. H and S to 10ft (3m). Has glossy leaves. Bears dense, rounded trusses of bell-shaped, lilac-purple blooms in early summer. Z4–8

***R.* 'Cilpinense'.** Semievergreen, compact rhododendron. H and S to 5ft (1.5m). Leaves are dark green and glossy. Bears abundant, large, bell-shaped, blush-pink flowers, flushed deeper in bud, in early spring. Flowers are vulnerable to frost damage. Z5–9

R. cinnabarinum (illus. p.125). Evergreen, upright rhododendron. H and 5–12ft (1.5–4m). Has blue-green leaves with small scales. Narrowly tubular, waxy, red, sometimes yellow, orange, apricot-pink or reddish purple flowers are borne in loose, pendent trusses in late spring. Z5–9.

subsp. *xanthocodon* (syn. *R. xanthocodon*) is of open, upright habit and has aromatic, mid-green leaves, which are blue-green when young. Bears bell-shaped, yellow flowers in late spring.

***R.* 'Coccineum Speciosum'.** Deciduous, bushy azalea. H and S 5–8ft (1.5–2.5m). Produces open funnel-shaped, brilliant rich orange-red blooms in early summer. Broadly lance-shaped leaves provide good fall color. Z6–8

***R.* 'Corneille'.** Deciduous, bushy azalea. H and S 5–8ft (1.5–2.5m). In early summer, produces fragrant, hose-in-hose flowers, pale pink with a darker pink outside. Has colorful fall foliage. Z6–8

***R.* 'Crest'**, syn. *R.* 'Hawk Crest'. Evergreen rhododendron of open habit. H and S 5–12ft (1.5–4m). Has broadly lance-shaped leaves. Bell-shaped flowers are borne in loose, flat-topped trusses, and are apricot in bud, opening to clear sulphur-yellow in late spring. Z5–9

***R.* 'Cunningham's White'.** Evergreen, compact rhododendron. H 8ft (2.5m), S 6ft (2m). In spring, has open trusses of funnel-shaped, pale lilac flowers, which fade to white, speckled with purple and yellow. Z6–8

***R.* 'Curlew'** (illus. p.125). Evergreen rhododendron of compact, spreading habit. H and S 1ft (30cm). Has dull green leaves and, in late spring, produces relatively large, open funnel-shaped, bright yellow flowers. Z5–9

***R.* 'Cynthia'.** Vigorous, evergreen, dome-shaped rhododendron. H and S to 20ft (6m). Bears conical trusses of bell-shaped, magenta-purple flowers, marked blackish-red within, in late spring. Excellent for sun or shade. Z6–8

***R. dauricum*.** Deciduous, upright rhododendron. H and S to 5ft (1.5m). Bears funnel-shaped, vivid purple flowers in loose clusters throughout winter. Green leaves turn purple-brown in frosty conditions, before falling in fall. Z6–8

***R. davidsonianum*.** Deciduous, upright rhododendron. H 5–12ft (1.5–4m). Aromatic leaves are lance-shaped to oblong. In late spring, bears clusters of funnel-shaped flowers, ranging from pale pink to mid-lilac-mauve. Z5–9

***R.* 'Daviesii'** (illus. p.125). Deciduous, upright azalea. H and S 6ft (2m). Fragrant, funnel-shaped, white flowers, each with a yellow flare, are borne in spring. Z6–8

R. decorum (illus. p.124). Evergreen, bushy rhododendron. H and S 12ft (4m). Oblong to lance-shaped leaves are mid-green above, paler beneath. Large, fragrant, funnel-shaped, white or shell-pink flowers, green- or pink-spotted within, are produced in early summer. Z6–8

R. degronianum* subsp. *heptamerum, syn. *R. metternichii*. Evergreen, upright rhododendron. H and S 5–12ft (1.5–4m). Has oblong leaves, glossy and green above, reddish-brown-felted beneath. In spring, bears rounded trusses of 10–15 bell-shaped, rose-red flowers, often subtly spotted within. Z6–8

***R. discolor*.** See *R. fortunei* subsp. *discolor*.

***R.* 'Doncaster'.** Evergreen, compact rhododendron. H and S 6–8ft (2–2.5m). Has leathery, glossy leaves and, in late spring, produces dense trusses of funnel-shaped, dark red flowers. Z6–8

***R.* 'Dopey'.** Evergreen, compact rhododendron. H and S 5ft (1.5m). In spring, bears rounded trusses of bell-shaped, flame-orange flowers. Z5–9

***R.* 'Dora Amateis'.** Evergreen, compact rhododendron. H and S 2ft (60cm). Leaves are slender, glossy and pointed. Abundant, broadly funnel-shaped, white flowers, tinged pink and marked with green, are produced in late spring. Sun tolerant. Z6–8

***R.* 'Elizabeth'.** Evergreen, dome-shaped rhododendron. H and S to 5ft (1.5m). Leaves are oblong. Produces trusses of large, trumpet-shaped, brilliant red flowers in late spring. Good in sun or partial shade. Z6–8

***R.* 'Elizabeth Lockhart'.** Evergreen, dome-shaped rhododendron. H and S 2ft (60cm). Produces shiny, purple-green leaves that become darker in winter. Bell-shaped, cherry red flowers are borne in spring. Z6–8

***R.* 'English Roseum'.** Evergreen, vigorous, bushy rhododendron. H and S to 8ft (2.5m). Dark green leaves are paler beneath. Bears compact trusses of funnel-shaped, lilac-rose flowers in late spring. Z4–8

***R.* 'Fabia'.** Evergreen, dome-shaped rhododendron. H and S 6ft (2m). Leaves are mid-green and lance-shaped. Produces loose, flat trusses of funnel-shaped, orange-tinted, scarlet flowers in early summer. Z7–9

R. falconeri (illus. p.124). Multi-stemmed, evergreen rhododendron. H to 40ft (12m),

S 15ft (5m). Has flaking, red-brown bark and broadly elliptic to ovate, dark green leaves, brown-felted beneath. In mid-spring, produces trusses of widely bell-shaped, fleshy, creamy-white or yellow flowers, sometimes pink-tinged, often with purple marks inside. Z6–9

***R.* 'Fastuosum Flore Pleno'** (illus. p.125). Evergreen, dome-shaped rhododendron. H and S 5–12ft (1.5–4m). In early summer, bears loose trusses of funnel-shaped, double, rich mauve flowers, with red-brown marks and wavy margins. Z6–8

***R. fictolacteum*.** See *R. rex* subsp. *fictolacteum*.

***R.* 'Fireball'.** Evergreen, compact rhododendron. H and S 6ft (2m). Produces rounded trusses of bell-shaped, vivid scarlet flowers in early spring. Z6–8

R. fortunei* subsp. *discolor, syn. *R. discolor*. Evergreen, treelike rhododendron. H and S to 25ft (8m). Leaves are oblong to ovate. Bears fragrant, broadly funnel-shaped, pink flowers in midsummer. Ideal in a light woodland. Z5–9

***R.* 'Fragrantissimum'** (illus. p.124). Lax, evergreen rhododendron. H and S 6ft (2m). Nutmeg-scented, broadly funnel-shaped, sometimes pink-flushed, white flowers, with yellow throats, are borne in mid-spring. Leaves are hairy. Z9–11

***R.* 'Freya'** (illus. p.125). Deciduous azalea of compact, shrubby habit. H and S 5ft (1.5m). Fragrant, funnel-shaped, double, pink-flushed, orange-salmon flowers are borne from late spring to early summer. Z6–8

***R.* 'Frome'.** Deciduous azalea of shrubby habit. H and S to 5ft (1.5m). In spring, bears trumpet-shaped, saffron-yellow flowers, overlaid red in throats; petals are frilled and wavy-margined. Z6–8

R. fulvum (illus. p.125). Evergreen, bushy rhododendron. H and S 5–12ft (1.5–4m). Oblong to ovate, polished, deep green leaves are brown-felted beneath. In early spring, bears loose trusses of bell-shaped, red-blotched, pink flowers, which fade to white. Z5–9

***R.* 'George Reynolds'.** Deciduous, bushy azalea. H and S to 6ft (2m). Large, funnel-shaped, yellow flowers, flushed pink in bud, are borne with or before the leaves in spring. Z6–8

***R.* 'Gibraltar'** (illus. p.125). Deciduous, bushy azalea. H 5ft (1.5m), S 3ft (1m). In spring, produces tubular, flame-red flowers, which are deep orange in bud. Z6–8

***R.* 'Gloria Mundi'.** Deciduous, twiggy azalea. H and S to 6ft (2m). Produces fragrant, honeysucklelike, yellow-flared, orange flowers, with frilled margins, in early summer. Z6–8

***R.* 'Glory of Littleworth'.** Evergreen or semievergreen, bushy hybrid between a rhododendron and an azalea. H and S 5ft (1.5m). Compact trusses of fragrant, bell-shaped, orange-marked, creamy-white flowers are borne abundantly in late spring and early summer. Not easy to cultivate. Z5–9

***R.* 'Gold Crown'.** See *R.* 'Goldkrone'.

***R.* 'Golden Torch'** (illus. p.124). Evergreen, compact rhododendron. H and S 3ft (1m). In spring, bears bell-shaped, pink-budded, pale yellow flowers. Z5–9

***R.* 'Goldkrone'**, syn. *R.* 'Gold Crown' (illus. p.125). Compact, evergreen shrub. H and S 5ft (1.5m). Funnel- to bell-shaped, bright golden-yellow flowers, delicately spotted ruby-red inside, are borne in succession in mid-spring. Z5–9

***R.* 'Gomer Waterer'** (illus. p.124). Evergreen, compact rhododendron. H and S 5–12ft (1.5–4m). Leaves are curved back at margins. Bell- to funnel-shaped flowers, borne in dense trusses in early summer, are white, flushed mauve, each with a basal, mustard blotch. Likes sun or partial shade. Z6–8

***R.* 'Grace Seabrook'** (illus. p.125). Evergreen, upright rhododendron. H and S 6ft (2m). Leaves are pointed. In spring, bears funnel-shaped, deep red flowers, which are paler toward the margins. Z5–9

***R. griffithianum*.** Evergreen, upright rhododendron with peeling, red bark. H to 20ft (6m), S 10ft (3m). Bears loose trusses of fragrant, widely bell-shaped, white or pale pink flowers in spring. Has large, elliptic, glabrous leaves. Z6–9

R. groenlandicum, syn. *Ledum groenlandicum* (Labrador Tea), illus. p.145.

***R.* 'Hatsugiri'.** Evergreen, compact azalea. H and S 2ft (60cm). Bears small, but very numerous, funnel-shaped, bright crimson-purple flowers in spring. Flowers very reliably. Z5–9

***R.* 'Hawk Crest'.** See *R.* 'Crest'.

***R.* 'Hinode-giri'.** Evergreen, compact azalea. H and S 5ft (1.5m). Funnel-shaped, bright crimson flowers are small, but produced in abundance in late spring. Likes sun or light shade. Z5–9

***R.* 'Hinomayo'.** Evergreen, compact azalea. H and S 5ft (1.5m). Small, funnel-shaped, clear pink flowers are produced in great abundance in spring. Likes sun or light shade. Z5–9

***R. hippophaeoides*.** Evergreen, erect rhododendron. H and S 5ft (1.5m). Narrowly lance-shaped, aromatic leaves are gray-green. Bears small, funnel-shaped, lavender or lilac flowers in spring. Tolerates wet, but not stagnant, soil. Z6–8

***R.* 'Homebush'.** Deciduous, compact azalea. H and S 5ft (1.5m). In late spring, bears tight, rounded heads of trumpet-shaped, semidouble, rose-purple flowers with paler shading. Z6–8

***R.* 'Hotei'** (illus. p.125). Evergreen, rhododendron of neat, compact habit. H and S 5–8ft (1.5–2.5m). Large, funnel-shaped, deep yellow flowers are freely produced in late spring. Z6–9

***R.* 'Humming Bird'.** Evergreen, dome-shaped rhododendron of neat, compact habit. H and S to 5ft (1.5m). From mid- to late spring, produces bell-shaped, rose-pink flowers in loose, nodding trusses, above rounded, glossy leaves. Z5–9

***R.* 'Hydon Hunter'.** Evergreen rhododendron of neat habit. H and S to 5ft (1.5m). In late spring or early summer, bears abundant, large, narrowly bell-shaped, red-rimmed flowers, paler toward the center and orange-spotted within. Z5–9

***R. impeditum*.** Slow-growing, compact, evergreen rhododendron. H and S to 2ft (60cm). Aromatic leaves are gray-green. Funnel-shaped, purplish-blue flowers are borne in spring. Ideal in a rock garden. Z6–8

***R.* 'Irohayama'.** Evergreen, compact azalea. H and S to 5ft (1.5m). Produces abundant, small, funnel-shaped, white flowers, with pale lavender margins and faint brown eyes, in spring. Does well in light shade. Z5–9

***R.* 'Jalisco Eclipse'.** Evergreen, open, bushy rhododendron. H and S 5–12ft (1.5–4m). Bears trusses of funnel-shaped, primrose-yellow flowers, with a deep crimson blotch, in early summer. Z6–9

***R.* 'Jeanette'.** Semievergreen, upright azalea. H and S 5–6ft (1.5–2m). Bears funnel-shaped, vivid phlox-pink, dark blotched flowers, in spring. Good in light shade or full sun. Z5–9

***R.* 'John Cairns'.** Evergreen, upright, compact azalea. H and 5–6ft (1.5–2m). Produces abundant funnel-shaped, deep orange-red flowers in spring. Grows reliably in sun or partial shade. Z5–9

***R. kaempferi*.** Semievergreen, erect, loosely branched azalea. H and S 5–8ft (1.5–2.5m). Leaves are ovate to lance-shaped in spring, smaller and elliptic-obovate in summer. Produces an abundance of funnel-shaped flowers in orange or red in late spring and early summer. Z5–9

***R.* 'Kilimanjaro'.** Evergreen, bushy rhododendron. H and S 5–12ft (1.5–4m). Bears broadly lance-shaped leaves. Bears large, rounded trusses of funnel- to bell-shaped, wavy-edged, deep red flowers, spotted crimson within, in late spring and early summer. Z5–9

***R.* 'Kirin'.** Evergreen, compact azalea. H and S to 5ft (1.5m). In spring, bears numerous hose-in-hose flowers that are deep rose, shaded a delicate silvery-rose. Looks best in light shade. Z5–9

***R. kiusianum*.** Semievergreen azalea of compact habit. H and S to 2ft (60cm). Leaves are narrowly ovate. Produces clusters of 2–5 funnel-shaped flowers, usually lilac-rose or mauve-purple, in late spring. Prefers full sun. Z5–9

***R.* 'Lady Alice Fitzwilliam'.** Evergreen rhododendron of open habit. H and S 5–12ft (1.5–4m). Leaves are glossy, dark green. In mid- to late spring, bears loose trusses of nutmeg-scented, broadly funnel-shaped, pink flowers, maturing to white, with yellow-marked throats. Grow against a south-or west-facing wall. Z9–11

***R.* 'Lady Clementine Mitford'.** Evergreen, rounded, dense rhododendron. H and S 12ft (4m). Has broadly ovate, glossy, dark green leaves. In late spring and early summer, bears compact trusses of funnel-shaped flowers, peach-pink fading to white in the center, with V-shaped, pink, green, and brown marks within. Z6–8

***R.* 'Lady Rosebery'.** Evergreen, stiffly branched rhododendron. H and S 5–12ft (1.5–4m). In late spring, bears clusters of pendulous, narrowly bell-shaped, waxy, deep pink flowers, which are paler toward petal margins. Ideal for woodland margins. Z6–9

***R. laetum*.** Erect, evergreen rhododendron. H and S 5ft (1.5m). Elliptic to broadly elliptic, glossy, dark green leaves have tiny, white scales beneath. In spring, red flower stalks bear funnel-shaped, golden-yellow flowers, later suffused orange-red. Z10–11 (min. 41°F/5°C)

***R.* 'Lem's Cameo'.** Evergreen, rounded, bushy rhododendron. H and S 5–8ft (1.5–2.5m). Leaves are rounded. In spring, bears large-domed trusses of open funnel-shaped, pale peach flowers, deep pink in bud, shaded to pink at margins, with basal, deep rose-colored blotches. Z5–9

***R. leucaspis*.** Densely branched, evergreen rhododendron. H 3ft (1m), S 5ft (1.5m). Has broadly elliptic, dark green leaves, bristly above, scaly and yellowish-green beneath. In early spring, bears saucer-shaped, white flowers, with chocolate-brown anthers. Z6–9

***R.* 'Loderi King George'** (illus. p.124). Large, evergreen rhododendron of open habit. H and S 12ft (4m). Has large leaves. In late spring and early summer, pale pink buds open to very large trusses of fragrant, funnel-shaped, pure white flowers, with subtle green marks in the throats. Z5–9

***R. lutescens*.** Semievergreen, upright rhododendron. H and 5–10ft (1.5–3m). Has ovate to lance-shaped leaves that are bronze-red when young. In early spring, bears funnel-shaped, primrose-yellow flowers. Effective in a light woodland. Z5–9

R. luteum (illus. p.125). Open deciduous azalea. H and S 5–8ft (1.5–2.5m). Leaves are oblong to lance-shaped. Bears very fragrant, funnel-shaped, bold yellow blooms in spring. Autumn foliage is rich and colorful. Z6–8

***R. macabeanum*.** Evergreen, treelike rhododendron. H and S up to 45ft (13.5m). Has large, broadly ovate leaves, dark green above, gray-felted beneath. In early spring, produces large trusses of bell-shaped, yellow flowers, marked purple within. Z8–9

***R. mallotum*.** Evergreen, upright, open rhododendron, occasionally treelike. H and S to 12ft (4m). Obovate to ovate leaves are deep green above, red-brown-felted beneath. Showy, bell-shaped, crimson flowers in loose trusses are borne in early spring. Z5–9

***R.* 'May Day'.** Evergreen, spreading rhododendron. H and S to 5ft (1.5m). Leaves are fresh green above, whitish-felted beneath. Produces numerous loose trusses of long-lasting, funnel-shaped, scarlet flowers in late spring; petallike calyces match the flower color. Z5–9

***R.* 'Medway'.** Deciduous, bushy, open azalea. H and S 5–8ft (1.5–2.5m). In late spring, bears large, trumpet-shaped, pale pink flowers with darker margins and orange-flashed throats; petal margins are frilled. Z6–8

***R. metternichii*.** See *R. degronianum* subsp. *heptamerum*.

***R.* 'Moonshine Crescent'.** Evergreen, rounded to upright rhododendron. H 6–8ft (2–2.5m), S 6ft (2m). In late spring, produces compact trusses of bell- to funnel-shaped, primrose yellow flowers. Leaves are oblong to ovate and dark green. Z6–8

***R.* 'Mother's Day'** (illus. p.125). Evergreen, compact azalea. H and S 3ft (1m). Produces funnel-shaped, bright red flowers in spring. Z6–9

***R. moupinense*.** Evergreen, rounded, compact rhododendron. H and S to 5ft (1.5m). Produces funnel-shaped, pink to white blooms in loose trusses in late winter and early spring. The small, ovate to elliptic leaves are glossy, dark green above, paler beneath. Best grown in a sheltered site to reduce risk of frost-damaged flowers. Z5–9

***R.* 'Mrs. G.W. Leak'.** Evergreen, upright, compact rhododendron. H and S 12ft (4m). In late spring, bears compact, conical trusses of funnel-shaped, pink flowers,

with black-brown and crimson marks within. Z6–8

R. multiflorum* var. *purpureum, syn. *Menziesia ciliicalyx* var. *purpurea* (illus. p.125). Deciduous, bushy shrub with obovate to ovate, bright green leaves and umbels of nodding, urn-shaped, purple-pink flowers in late spring and early summer. Z6–8

***R. nakaharae*.** Evergreen, prostrate, compact azalea. H and S 2ft (60cm). Shoots and oblong to ovate leaves are densely hairy. Funnel-shaped, dark brick-red flowers are borne in small clusters. Valuable for midsummer flowering. Ideal for a rock garden. Z5–9

***R.* 'Nancy Waterer'.** Deciduous, twiggy azalea. H and S 5–8ft (1.5–2.5m). Has large, long-tubed and honeysucklelike, brilliant golden-yellow flowers in early summer. Ideal in a light woodland or full sun. Z6–8

***R.* 'Narcissiflorum'** (illus. p.124). Vigorous, deciduous, compact azalea. H and S 5–8ft (1.5–2.5m). Sweetly scented, hose-in-hose, pale yellow flowers, darker outside and in center, are borne in late spring or early summer. Fall foliage is bronze. Z6–8

***R. niveum*.** Evergreen, shrubby rhododendron. H 15ft (5m), S 10ft (3m). Narrowly obovate to lance-shaped, dark green leaves are white felted when young and brown felted beneath when mature. Bell-shaped, smoky blue to rich purple flowers in compact, rounded heads are borne in spring. Z5–9

***R.* Nobleanum Group.** Evergreen, upright shrubs or treelike rhododendrons. H and S to 15ft (5m). Produces large, compact trusses of broadly funnel-shaped, rose-red, pink or white flowers in winter or early spring. Will flower for long periods in mild weather; best in a sheltered position. Z6–8

***R.* 'Norma'.** Vigorous, deciduous, compact azalea. H and S to 5ft (1.5m). Bears abundant, hose-in-hose, rose-red flowers, with a salmon glow, in spring. Grows well in sun or light shade. Z6–8

***R.* 'Nova Zembla'.** Vigorous, evergreen, upright rhododendron. H and S 5–12ft (1.5–4m). Has funnel-shaped, dark red flowers in closely set trusses from late spring to early summer. Z5–9

***R. occidentale*.** Bushy, deciduous, azalea. H and S 5–8ft (1.5–2.5m). Glossy, elliptic to lance-shaped leaves turn yellow or orange in fall. Bears fragrant, funnel-shaped, white or pale pink flowers, each with a basal, yellow-orange blotch, from early to midsummer. Z6–8

***R.* 'Olive'.** Upright, evergreen rhododendron. H 4ft (1.2m), S 3ft (1m). Small, ovate to elliptic, mid-green leaves are paler green beneath. Bears funnel-shaped, mauve-pink flowers, with darker spots inside, in early spring. Z6–8

R. orbiculare (illus. p.124). Evergreen rhododendron of compact habit. H and S to 10ft (3m). Has rounded, matte, bright green leaves, and bears bell-shaped, rose-pink flowers in loose trusses in late spring. Z5–9

***R. oreotrephes*.** Evergreen, upright shrub or treelike rhododendron. H and S to 15ft (5m). Has attractive, scaly, gray-green foliage. In spring, bears loose trusses of 3–10 broadly funnel-shaped flowers, usually mauve or purple, but variable, often with crimson spots. Z5–9

R. pachysanthum (illus. p.124). Evergreen, compact, rounded rhododendron. H and S 6ft (2m). New shoots and oblong leaves,with pointed tips, are covered in silvery or brownish felt. Bears trusses of open bell-shaped, white to pale pink flowers, sometimes with purple flecks, in mid- to late spring. Z5–9

***R.* 'Palestrina'** (illus. p.124). Evergreen, compact, free-flowering azalea. H and S to 4ft (1.2m). Bears large, open funnel-shaped, white flowers, with faint, green marks, in late spring. Grows well in light shade. Z5–9

***R.* 'Patty Bee'** (illus. p.125). Evergreen, compact rhododendron. H and S 3ft (1m). Produces trusses of funnel-shaped, lemon-colored flowers in spring. Z5–9

***R.* 'Percy Wiseman'** illus. p.122.

***R.* 'Peter John Mezitt'**, syn. *R.* 'P.J. Mezitt'. Evergreen, compact rhododendron. H and S up to 5ft (1.5m). Aromatic leaves are small, dark green in summer, bronze-purple in winter. Bears frost-resistant, funnel-shaped, lavender-pink flowers in early spring. Good in full sun. Z6–8

***R.* 'Pink Pearl'** (illus. p.125). Vigorous, evergreen, upright, open rhododendron. H and S 12ft (4m) or more. Produces tall trusses of open funnel-shaped, pink flowers in late spring. Z6–8

***R.* 'P.J. Mezitt'.** See *R.* 'Peter John Mezitt'.

***R.* 'Polar Bear'.** Vigorous, multi-stemmed, evergreen rhododendron. H 15ft (5m), S 12ft (4m). In late summer, bears strongly scented, funnel-shaped, white flowers, with light brown-flecked, pale green throats. Z5–9

***R.* 'Praecox'** (illus. p.125). Partially deciduous, compact rhododendron. H 5ft (1.5m), S 3ft (1m). Funnel-shaped, rose-purple flowers are borne in small clusters of 2 or 3, at the ends of the shoots in late winter and early spring. Elliptic leaves are aromatic when bruised. Z6–8

***R.* 'Ptarmigan'.** Evergreen, spreading rhododendron that forms a compact mound. H to 1ft (30cm), S 2½ft x (2½ft) or more. In early spring, produces funnel-shaped, pure white flowers. Prefers a site in full sun. Z6–8

***R.* 'Purple Splendour'.** Evergreen, bushy azalea. H and S 5ft (1.5m). In late spring or early summer, bears trusses of funnel-shaped, wavy edged, rich purple-blue flowers, with maroon markings in the throat. Z6–8

***R.* 'Queen Elizabeth II'.** Evergreen, bushy rhododendron. H and S 5–12ft (1.5–4m). Bears funnel-shaped, greenish-yellow flowers in loose trusses in late spring. Narrowly ovate or lance-shaped leaves are glossy and mid-green above, paler beneath. Z5–9

***R.* 'Queen of Hearts'.** Evergreen, open rhododendron. H and S 5–12ft (1.5–4m). Produces numerous domed trusses of funnel-shaped, deep crimson flowers, black-speckled within, in mid-spring. Z5–9

R. quinquefolium (illus. p.124). Deciduous, bushy shrub. H 10–13ft (3–4m), S 3m. Has obovate to diamond-shaped, mid-green leaves in whorls of 4 or 5 at the ends of the shoots. Leaves have reddish edges when young and color well in fall. In mid- and late spring, bears small clusters of pendent, saucer-shaped, green-spotted, white flowers. Z5–9

***R. racemosum*.** Evergreen, upright, stiffly branched rhododendron. H and S to 8ft (2.5m). Produces clusters of widely funnel-shaped, bright pink flowers along the stems in spring. Small, aromatic, broadly ovate leaves are dull green above, gray-green below. Z6–8

R. rex*.** Vigorous, evergreen, upright shrub or treelike rhododendron. H and S 12ft (4m) or more. Leaves are pale buff-felted beneath. Pink or white flowers have a crimson blotch and a spotted throat. Z5–9. **subsp. *arizelum see *R. arizelum*. **subsp. *fictolacteum*** (syn. *R. fictolacteum*; illus. p.124), H to 45ft (13.5m), has large leaves, green above, brown-felted beneath. In spring, bears trusses of bell-shaped, white flowers with a maroon blotch and often a black, spotted throat.

***R.* 'Romany Chai'.** Vigorous, evergreen rhododendron, open in habit when young, becoming denser with age. H and S 5–12ft (1.5–4m). Has dark green, bronze-tinged foliage. In early summer, produces large, compact trusses of broadly funnel-shaped, rich brown-red flowers, each with a basal, maroon blotch. Suits a light woodland. Z5–9

***R.* 'Roseum Elegans'.** Vigorous, evergreen, rounded rhododendron. H and S 8ft (2.5m) or more. Foliage is bold and glossy, deep green. In early summer, bears rounded trusses of broadly funnel-shaped, reddish-purple flowers, with yellow-brown marks. Z4–8

***R.* 'Roza Stevenson'.** Vigorous, evergreen, upright rhododendron of open habit. H and S 5–12ft (1.5–4m). Produces abundant, fine, loose trusses of saucer-shaped, lemon flowers in mid- to late spring. Excellent in light shade. Z5–9

***R. rubiginosum*.** Vigorous, evergreen, upright, well-branched rhododendron. H 20ft (6m), S 8ft (2.5m). Aromatic leaves are lance-shaped, dull green above, reddish-brown beneath. Produces funnel-shaped, lilac-purple flowers in loose trusses in mid-spring. Z6–8

***R. schlippenbachii*.** Deciduous, rounded, open azalea. H and 8ft (2.5m). Spoon-shaped leaves are in whorls at branch ends. Bears loose trusses of 3–6 saucer-shaped, pink flowers in mid-spring. Suits a light woodland. Z6–8

***R.* 'Seta'** (illus. p.124). Evergreen, erect rhododendron. H 5ft (1.5m), S 3–5ft (1–1.5m). In early spring, bears loose trusses of tubular, vivid pink-and-white-striped flowers, fading to white at bases. Z5–9

***R.* 'Seven Stars'.** Vigorous, evergreen, upright, dense rhododendron. H and S 6–10ft (2–3m). Has yellowish-green leaves. In spring, bears abundant trusses of large, bell-shaped, wavy-margined, white flowers, flushed with apple-blossom pink, pink in bud. Z5–9

R. sinogrande (illus. p.124). Evergreen, bushy rhododendron. H and S 30ft (10m). Very large, oblong to lance-shaped, glossy, dark green leaves, are silver- to buff-felted beneath. In mid- and late spring, bears widely bell-shaped, pale yellow to creamy-white flowers, marked crimson inside. Z8–10

***R.* 'Snowdrift'.** Deciduous, bushy azalea. H and S to 8ft (2.5m). Produces trusses of large, slender-tubed flowers in spring before leaves emerge. White flowers have yellow-green marks that deepen to orange. Z6–8

***R. souliei*.** Evergreen, open rhododendron. H and S 5–12ft (1.5–4m). Has rounded leaves and, in late spring, saucer-shaped, soft pink flowers. Grows best in areas of low rainfall. Z6–8

***R.* 'Spek's Orange'.** Deciduous, bushy azalea. H and S to 8ft (2.5m). In late spring, bears bold trusses of large, scented, slender-tubed, bright reddish-orange flowers, with greenish marks within. Z6–8

***R.* 'Strawberry Ice'.** Deciduous, bushy azalea. H and S 5–8ft (1.5–2.5m). In late spring, deep pink buds open into trumpet-shaped, flesh-pink flowers, with deep yellow-marked throats and mottled deeper pink petal margins. Z6–8

***R.* 'Surprise'.** Evergreen, dense azalea. H and S to 5ft (1.5m). Bears abundant, small, funnel-shaped, light orange-red flowers in mid-spring. Looks effective when mass planted and is best positioned in light shade or full sun. Z5–9

***R.* 'Susan'.** Close-growing, evergreen rhododendron. H and S 5–12ft (1.5–4m). Foliage is glossy, dark green. In spring, bears large trusses of open funnel-shaped flowers in 2 shades of blue-mauve, spotted purple within. Z6–8

***R. sutchuenense*.** Evergreen, spreading shrub or treelike rhododendron. H and S to 15ft (5m). Has large leaves and, in early spring, bears large trusses of broadly funnel-shaped, pink flowers, spotted deeper within. Suitable for light woodland. Z5–9

***R.* 'Temple Belle'.** Evergreen rhododendron of neat, compact habit. H and S 5–8ft (1.5–2.5m). Loose trusses of bell-shaped, clear pink flowers are borne in spring. Rounded leaves are mid-green above, gray-green beneath. Z5–9

***R. thomsonii*.** Evergreen, rounded rhododendron of open habit. H and S to 5.5m (18ft). Leaves are waxy, dark green above, whiter beneath. Peeling, fawn-colored bark contrasts well with bell-shaped, waxy, red flowers in spring. Z5–9

R. tsusiophyllum, syn. *Tsusiophyllum tanakae*. Semievergreen, spreading shrub. H 6in (15cm) or more, S 10in (25cm). Twiggy, branched stems bear tiny, narrowly ovate, hairy leaves. In early summer, produces small, tubular, white or pinkish-white flowers at stem tips. Z8–10

***R. veitchianum*.** Evergreen rhododendron. H 5ft (1.5m), S to3ft (1m). Has purple-brown young shoots and oblong to elliptic, leathery, sparsely scaly, mid- to dark green leaves. In mid- and late spring, bears funnel-shaped, white to pale pink flowers, with brownish or yellow-orange markings. Z9–11

***R.* 'Vuyk's Scarlet'.** Evergreen, compact azalea. H and S to 2ft (60cm). In spring, bears an abundance of relatively large, open funnel-shaped, brilliant red flowers, with wavy petals, which completely cover the glossy foliage. Z6–8

***R. wardii*.** Evergreen, compact rhododendron. H and S 5–12ft (1.5–4m). Leaves are rounded. In late spring, bears loose trusses of saucer-shaped, clear yellow flowers, with crimson basal blotches. Z5–9

R. williamsianum (illus. p.124). Evergreen rhododendron of compact, spreading habit. H and S 5ft (1.5m). Young ovate–rounded leaves are

bronze, maturing to mid-green. Has loosely clustered, bell-shaped, pink flowers in spring. Ideal for a small garden. Z5–9
***R.* 'Woodcock'.** Evergreen, compact, spreading rhododendron. H and S 5–8ft (1.5–2.5m). Has semi-glossy, dark green leaves and, in spring, produces abundant, loose trusses of funnel-shaped, rose-red flowers. Z5–9
***R. xanthocodon*.** See *R. cinnabarinum* subsp. *xanthocodon*.
R. yakushimanum (illus. p.124). Evergreen, dome-shaped rhododendron of neat, compact habit. H 3ft (1m), S 5ft (1.5m). Leaves are broadly ovate, silvery at first, maturing to deepest green, and brown-felted beneath. In late spring, bears open funnel-shaped, pink flowers, green flecked within, that fade to near white. Z5–9
***R.* 'Yellow Hammer'** illus. p.126.
***R. yunnanense*.** Semievergreen, open rhododendron. H and S 5–12ft (1.5–4m). Has aromatic, gray-green leaves and bears profuse, butterflylike, pale pink or white flowers, with blotched throats, in spring. Z5–9

RHODOHYPOXIS

HYPOXIDACEAE

Genus of dwarf, spring- to summer-flowering, tuberous perennials, grown for their pink, red, or white flowers, each comprising 6 petals that meet at the center, so the flower has no eye. Borderline fully hardy to frost hardy, if kept fairly dry while dormant. Needs full sun, sandy, peaty soil, and plenty of moisture in summer. Propagate in spring by seed or offsets.
***R. baurii*.** Spring- and early summer-flowering, tuberous perennial. H and S 4in (10cm). Has an erect, basal tuft of narrowly lance-shaped, hairy leaves. Bears a succession of erect, flattish, white, pale pink or red flowers, ¾in (2cm) across, on slender stems. Z9–11. **'Albrighton'** illus. p.365. **'Douglas'** has rich deep red flowers. **'Margaret Rose'** illus. p.362.
var. *platypetala*, H 5in (12cm), S 6in (15cm), has wider leaves, and white or very pale pink flowers, to 1¼in (3cm) across.

RHODOLEIA

HAMAMELIDACEAE

Genus of evergreen, mainly spring-flowering shrubs or small trees, grown for their foliage and flowers. Frost hardy to half hardy. Needs full light or partial shade and humus-rich, well-drained, neutral to acidic soil. Water potted specimens freely; sparingly when not in full growth. Tolerates pruning if necessary. Propagate by semiripe cuttings in summer or by seed when ripe, in fall or spring.
***R. championii*.** Evergreen, bushy tree. H 12ft (4m), S 10ft (3m). Elliptic to ovate, bright green leaves, each to 3½in (9cm) long, are borne near the shoot tips. Bears clusters of tiny flowers, surrounded by petallike, pink bracts in spring. Z7–10

RHODOPHIALA

AMARYLLIDACEAE

Genus of bulbs, grown for their large, funnel-shaped flowers. Frost hardy to frost tender. Needs full sun or partial shade and well-drained soil. Keep dormant bulbs dry in winter. Propagate by seed in spring or by offsets in spring (summer-flowering species).
R. advena, syn. *Hippeastrum advenum*, illus. p.410.

RHODOTHAMNUS

ERICACEAE

Genus of evergreen, semiprostrate, open shrubs, grown for their profusion of flowers, borne in early summer. Suitable for rock gardens and peat beds. Fully hardy. Requires sun and humus-rich, well-drained, acidic soil. Propagate by seed in spring or by semiripe cuttings in summer.
R. chamaecistus illus. p.338.

RHODOTYPOS

ROSACEAE

Genus of one species of deciduous shrub, grown for its flowers. Fully hardy. Needs sun or partial shade and moist but well-drained, fertile soil. After flowering, on established plants, cut back some older shoots. Propagate by softwood cuttings in summer or by seed in fall.
***R. kerrioides*.** See *R. scandens*.
R. scandens, syn. *R. kerrioides*, illus. p.149.

***Rhoeo discolor*.** See *Tradescantia spathacea*.
***Rhoeo spathacea*.** See *Tradescantia spathacea*.

RHOICISSUS

VITACEAE

Genus of evergreen tendril climbers and trees, grown for their handsome foliage. Intermittently bears inconspicuous flowers. Frost tender. Grow in fertile, well-drained soil with light shade in summer. Water regularly, less in cold weather. Provide support. Remove crowded stems when necessary or in early spring. Propagate by seed in spring or by semiripe cuttings in summer.
R. capensis (Cape grape). Vigorous, evergreen, tendril climber. H and S to 15ft (5m). Rounded, toothed, lustrous, mid- to deep green leaves, to 8in (20cm) wide, have deeply rounded, heart-shaped bases. Z10–12 (min. 45ºF/7ºC)
***R. rhombifolia*.** See *Cissus rhombifolia*.
***R. rhomboidea*.** See *Cissus rhombifolia*.

RHOMBOPHYLLUM

AIZOACEAE

Genus of mat-forming, perennial succulents with dense, basal rosettes of linear or semicylindrical leaves, each expanded toward middle or tip; leaf tip is reflexed or incurved. Frost tender. Requires sun and very well-drained soil. Propagate by seed or stem cuttings in spring or summer.
R. rhomboideum illus. p.494.

RHUS

Sumach

ANACARDIACEAE

Genus of deciduous or evergreen trees, shrubs and scrambling climbers, grown for their divided, ashlike foliage, fall color and, in some species, showy fruit clusters. Fully to frost tender. Requires sun and well-drained soil. Propagate by semiripe cuttings in summer, by seed in fall or by root cuttings in winter. May be attacked by coral spot fungus.
***R. aromatica*.** Deciduous, bushy shrub. H 3ft (1m), S 5ft (1.5m). Deep green leaves, comprising 3-palmate, aromatic leaflets, turn orange or reddish-purple in fall. Tiny, yellow flowers are borne in mid-spring, before leaves emerge, then spherical, red fruits. Z3–9
***R. cotinoides*.** See *Cotinus obovatus*.
***R. cotinus*.** See *Cotinus coggygria*.
R. glabra (Smooth sumach) illus. p.140.
***R. hirta*.** See *R. typhina*. **'Laciniata'** see *R. typhina* 'Dissecta'.
***R. potaninii*.** Deciduous, round-headed tree. H 40ft (12m), S 15ft (5m). Has large, dark green leaves, with usually 7–11 ovate leaflets that turn red in fall. In summer, produces pendent, pyramidal panicles of tiny, creamy white flowers. Female flower clusters develop into tiny, spherical, black or brownish fruits. Z3–9
***R.* x *pulvinata* 'Red Autumn Lace'** illus. p.90.
***R. succedanea*.** See *Toxicodendron succedaneum*.
R. typhina, syn. *R. hirta* (Stag's horn sumach). Deciduous, spreading, suckering, open shrub or tree. H 15ft (5m), S 20ft (6m). Velvety shoots are clothed in dark green leaves with oblong leaflets. Produces minute, greenish-white flowers, from mid- to late summer, in erect, conical panicles. Leaves become brilliant orange-red in fall, accompanying clusters of spherical, hairy, deep red fruits on female plants. Z3–9.
'Dissecta' (syn. *R. hirta* 'Laciniata', *R.t.* 'Laciniata' of gardens) illus. p.117.
'Laciniata' of gardens see *R.t.* 'Dissecta'.
Radience ('Sinrus') illus. p.90. **Tiger Eyes ('Bailtiger')**, H and S 3–6ft (1–2m), is a slower-growing, more compact form. Leaves emerge yellow-green in spring, maturing to bright yellow and combining well with reddish-purple young shoots. Good orange-red fall color.
***R. verniciflua*.** See *Toxicodendron vernicifluum*.

x RHYNCATTLEANTHE

ORCHIDACEAE

See also ORCHIDS.
x *R.* Cherub gx 'Spring Daffodil'. Evergreen, epiphytic orchid for an intermediate greenhouse. H 6in (15cm), S 8in (20cm). Sprays of yellow flowers, 2in (5cm) across, open in spring. Broadly ovate, rigid leaves are 4in (10cm) long. Provide good light in summer. Z11–12 (min. 55ºF/13ºC; max. 86ºF/30ºC)

***Rhynchelytrum*.** See *Melinis*.

x RHYNCHOLAELIO-CATTLEYA

ORCHIDACEAE

See also ORCHIDS.
x *R.* Hetherington Horace gx 'Coronation', syn. x *Brassolaeliocattleya* Hetherington Horace gx 'Coronation'. Evergreen, epiphytic orchid for an intermediate greenhouse. H and S 1½ft (45cm). Stiff, ovate leaves are 4–6in (10–15cm) long. Bears fragrant, light pink flowers, 4in (10cm) across, each with a deep pink-yellow lip, up to 4 to a stem, mainly in spring. Provide good light in summer. Z11–12 (min. 13ºC/55ºF; max. 82ºF/28ºC)
x *R.* Mount Adams gx, syn. x *Brassocattleya* Mount Adams gx (illus. p.466). Evergreen, epiphytic orchid for an intermediate greenhouse. H 1ft (30cm), S 1½ft (45cm). Lavender-pink flowers, to 6in (15cm) across, each with a darker lip marked yellow and red, up to 4 per stem, are borne intermittently. Ovate, stiff leaves are 6in (15cm) long. Needs good light in summer. Z11–12 (min. 55ºF/13ºC; max. 82ºF/28ºC)
x *R.* St Helier gx, syn. x *Brassolaeliocattleya* St. Helier gx. Evergreen, epiphytic orchid for an intermediate greenhouse. H and S 1½ft (45cm). Has ovate, stiff leaves 6in (15cm) long. Pinkish-purple flowers, 6–7in (15–18cm) across, each with a yellow-marked, rich red lip, 1–4 to a stem, are borne mainly in spring. Needs good light in summer. Z11–12 (min. 55ºF/13ºC; max. 82ºF/28ºC)

RHYNCHOSPORA

CYPERACEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
R. colorata, syn. *Dichromena colorata*, illus. p.437.

RHYNCHOSTELE

ORCHIDACEAE

See also ORCHIDS.
R. bictoniensis, syn. *Lemboglossum bictoniense, Odontoglossum bictoniense*. Evergreen, epiphytic orchid for a cool greenhouse. H 2ft (60cm), S 1ft (30cm). Olive-green flowers, 1in (2.5cm) across, barred with dark brown and each with a sometimes pink-flushed, white lip, are produced in spikes in late summer. Leaves are narrowly ovate and 4–18in (10–45cm) long. Requires shade in summer. Z11–12 (min. 50ºF/10ºC; max. 75ºF/24ºC)
R. cervantesii, syn. *Lemboglossum cervantesii, Odontoglossum cervantesii*. Evergreen, epiphytic orchid for a cool greenhouse. H and S 6in (15cm). In winter, produces sprays of papery, white flowers, 1in (4–6cm) across, with cobweblike, light brown marks. Has narrowly ovate leaves, 4–6in (10–15cm) long. Grow in shade in summer. Z11–12 (min. 50ºF/10ºC; max. 75ºF/24ºC)
R. cordata, syn. *Lemboglossum cordatum, Odontoglossum cordatum*. Evergreen, epiphytic orchid for a cool greenhouse. H 8in (20cm), S 6in (15cm). Sprays of brown-marked, green, white, or yellow flowers, 1in (2.5cm) across, open in spring. Leaves are narrowly ovate and 4–6in (10–15cm) long. Provide shade in summer and keep very dry in winter. Z11–12 (min. 50ºF/10ºC; max. 75ºF/24ºC)
R. rossii, syn. *Lemboglossum rossii, Odontoglossum rossii* (illus. p.466). Evergreen, epiphytic orchid for a cool greenhouse. H and S 6in (15cm). In fall–winter, white, pink, or sometimes yellow flowers, 1in (2.5cm) across, speckled beige-brown, are borne in spikes. Narrowly ovate leaves are 2–8in (5–20cm) long. Needs shade in summer. Z11–12 (min. 50ºF/10ºC; max. 75ºF/24ºC)

RIBES
Currant

GROSSULARIACEAE

Genus of deciduous or evergreen, mainly spring-flowering shrubs, grown for their edible fruits (currants and gooseberries) or their flowers. Fully to frost hardy. Needs full sun and well-drained, fertile soil, but *R. laurifolium* tolerates shade. After flowering, cut out some older shoots and, in winter or early spring, prune straggly, old plants hard. Propagate deciduous species by hardwood cuttings in winter, evergreens by semiripe cuttings in summer. Aphids attack young foliage.

R. aureum of gardens. See *R. odoratum*.

R. laurifolium illus. p.165.

R. odoratum, syn. *R. aureum* of gardens (Buffalo currant). Deciduous, upright shrub. H and S 6ft (2m). Bears pendent clusters of fragrant, tubular, golden-yellow flowers from mid- to late spring, then rounded, purple fruits. Rounded, 3-lobed, bright green leaves turn red and purple in fall. Z4–8

R. sanguineum (Flowering currant). **'Brocklebankii'** is a deciduous, spreading shrub. H and S 4ft (1.2m). Has aromatic, pale yellow leaves. Pendent clusters of small, pale pink flowers, in spring, are followed by white-bloomed, black fruits. **'Koja'** illus. p.146. **'Pulborough Scarlet'** illus. p.123. **'Tydeman's White'**, H and S 8ft (2.5m), has pure white flowers. **White Icicle ('Ubric')** is vigorous and early flowering, bearing pure white flowers. Z4–8

R. speciosum (Fuchsia-flowered currant) illus. p.193.

RICHEA

ERICACEAE/EPACRIDACEAE

Genus of evergreen, summer-flowering shrubs and small trees, grown for their foliage and densely clustered flowers. Frost to half hardy. Needs sun or partial shade and moist, peaty, neutral to acidic soil. Propagate by semiripe cuttings in summer or by seed in fall.

R. scoparia. Evergreen, upright shrub. H and S to 5ft (1.5m). Shoots are covered with narrowly lance-shaped, sharp-pointed, dark green leaves. Bears dense, upright spikes of small, egg-shaped, pink, white, orange or maroon flowers in early summer. Z8–11

RICINUS

EUPHORBIACEAE

Genus of one species of fast-growing, evergreen, treelike shrub, grown for its foliage. In cool climates is grown as an annual. Half hardy. Needs sun and fertile to rich, well-drained soil. May require support in exposed areas. Propagate by seed sown under glass in early spring. ⓘ All parts of *R. communis*, particularly the seeds, are highly toxic if ingested; contact with the foliage may aggravate skin allergies.

R. communis (Castor-oil plant) illus. p.318. **'Impala'** illus. p.308.

ROBINIA

PAPILIONACEAE/LEGUMINOSAE

Genus of deciduous, mainly summer-flowering trees and shrubs, grown for their foliage and clusters of pealike flowers. Useful for poor, dry soil. Fully hardy. Needs a sunny position. Grows in any but waterlogged soil. Branches are brittle and may be damaged by strong winds. Propagate by seed or suckers in fall or by root cuttings in winter. ⓘ All parts may cause severe discomfort if ingested.

***R.* x *ambigua* 'Decaisneana'.** Deciduous, spreading tree. H 50ft (15m), S 30ft (10m). Dark green leaves have numerous ovate leaflets. Long, hanging clusters of pealike, pink flowers are borne in early summer. Z4–8

R. hispida (Rose acacia) illus. p.133.

R. pseudoacacia (False acacia, Locust). Fast-growing, deciduous, spreading tree. H 80ft (25m), S 50ft (15m). Dark green leaves consist of 11–23 ovate leaflets. Bears dense, drooping clusters of fragrant, pealike, white flowers in late spring and early summer. Z3–8. **'Frisia'** illus. p.76. **'Inermis'** see *R.p.* 'Umbraculifera'. **'Lace Lady'** (syn. *R.p.* 'Twisty Baby'), H 12–20ft (4–6m), S 15–22ft (5–7m), is slow-growing and shrubby, with few thorns. Young growths are twisted and contorted, and older leaves may be wavy or curled. Rarely flowers. Suitable for a container. **'Twisty Baby'** see *R.p.* 'Lace Lady'. **'Umbraculifera'** (syn. *R.p.* 'Inermis'; Mop-head acacia), H and S 20ft (6m), rarely produces a rounded, dense flower head.

***R.* x *slavinii* 'Hillieri'** illus. p.86.

Rochea coccinea. See *Crassula coccinea*.

RODGERSIA

SAXIFRAGACEAE

Genus of summer-flowering, rhizomatous perennials, ideal for pond sides. Fully hardy. Grows in sun or partial shade and in soil that is moist; requires shelter from strong winds, which may damage foliage. Propagate by division in spring or by seed in fall.

R. aesculifolia illus. p.437.

***R. pinnata* 'Fireworks'.** Clump-forming, rhizomatous perennial. H 3ft (1m), S 2ft (60cm). Has a large creeping root and large, pinnate, red-tinged, mid-green leaves with narrowly ovate leaflets. In summer, produces much-branched, loose panicles of small, star-shaped, pink-red flowers. Z5–7. **'Superba'**, H 3–4ft (1–1.2m), S 75cm (2½ft), has bronze-tinged, emerald-green leaves and bright pink flowers.

R. podophylla illus. p.436.

R. sambucifolia illus. p.437.

R. tabularis. See *Astilboides tabularis*.

ROMNEYA
Tree poppy

PAPAVERACEAE

Genus of summer-flowering, woody-based perennials and deciduous subshrubs. Fully hardy. Requires a warm, sunny position and deep, well-drained soil. Difficult to establish, resents being moved and, in very cold areas, roots may need protection in winter. Once established, may spread rapidly. Propagate by softwood cuttings of basal shoots in early spring, by seed in fall (transplanting seedlings without disturbing rootballs), or by root cuttings in winter.

R. coulteri (Tree poppy) illus. p.216. **'White Cloud'** is a vigorous, bushy, woody-based perennial. H 3–8ft (1–2.5m), S indefinite. Throughout summer, bears large, slightly fragrant, shallowly cup-shaped, white flowers with prominent golden stamens. Leaves are ovate, deeply lobed, and gray. Z7–10

ROMULEA

IRIDACEAE

Genus of crocuslike corms, grown for their funnel-shaped flowers. Frost to half hardy. Needs full light and well-drained, sandy soil. Water freely during the growing period. Most species die down in summer and then need warmth and dryness, but *R. macowanii* is dormant in winter. Propagate by seed in fall, or in spring for *R. macowanii*.

R. bulbocodioides of gardens. See *R. flava*.

R. bulbocodium illus. p.419.

R. flava, syn. *R. bulbocodioides* of gardens. Early spring-flowering corm. H to 4in (10cm), S 2in (5cm). Has a threadlike, erect, basal leaf and 1–5 upright, widely funnel-shaped, usually yellowish green flowers, ¾–1½in (2–4cm) across, with deeper yellow centers. Z10–11

R. longituba. See *R. macowanii* var. *alticola*.

R. macowanii* var. *alticola, syn. *R. longituba*. Summer-flowering corm. H 3in (8cm), S 2in (5cm). Leaves are threadlike, erect and basal. Produces 1–3 upright, yellow flowers, each 1¼in (3cm) across, with a long tube expanding to become a wide funnel shape. Z9–11

R. sabulosa. Early spring-flowering corm. H 4–8in (10–20cm), S 2in (5cm). Has threadlike, erect, basal leaves. Stems bear 1–4 upward-facing, funnel-shaped, black-centered, bright red flowers that open flattish, to 1½–2in (4–5cm) across, in the sun. Z10–11

RONDELETIA

RUBIACEAE

Genus of evergreen, mainly summer-flowering trees and shrubs, grown mainly for their flowers. Frost tender. Requires full light or partial shade and fertile, well-drained soil. Water containerized specimens freely when in full growth, moderately at other times. Stems may be shortened in early spring if necessary. Propagate by seed in spring or by semiripe cuttings in summer.

R. amoena. Evergreen, rounded shrub. H and S 6–12ft (2–4m). Ovate, dark green leaves are brown-hairy beneath. Produces dense clusters of tubular, 4-or 5-lobed, pink or white flowers with bearded yellow throats in summer. Z11–12 (min. 54°F/12°C)

Rooksbya euphorbioides. See *Neobuxbaumia euphorbioides*.

ROSA
Rose

ROSACEAE

Genus of deciduous or semievergreen, open shrubs and scrambling climbers, grown for their profusion of flowers, often fragrant, and sometimes for their fruits (rose hips). Leaves are divided into usually 5 or 7 ovate leaflets, with rounded or pointed tips, that are sometimes toothed. Stems usually bear prickles. Fully hardy, unless otherwise stated below. Prefers an open, sunny site and requires fertile, moist but well-drained soil. Avoid planting in an area where roses have been grown in recent years, as problems due to harmful organisms may occur: either exchange the soil, which may be used satisfactorily elsewhere, or choose another site for the new rose. To obtain blooms of high quality, feed in late winter or early spring with a balanced fertilizer and apply a mulch. In spring and summer, feed regularly at 3-weekly intervals. Remove spent flower heads from plants that are "remontant" ("rising up again;" other terms used are repeat- or perpetual-flowering). May be trimmed for tidiness in early winter. To improve health, flower quality, and shape of bush, prune in the dormant season or, preferably, in early spring, before young shoots develop from dormant growth buds: remove dead, damaged, and dying wood; lightly trim Old Garden and Groundcover roses (see below); remove two-thirds of previous summer's growth of Modern bush, including miniature, roses. Correct treatment of Modern shrub and climbing roses, ramblers, and Species roses depends on the individual cultivar, but in general they should be pruned only lightly. Propagate by budding in summer or by hardwood cuttings in fall. All roses are prone to attack by various pests and diseases, including aphids, blackspot, powdery mildew, rust, and sawfly.

Rose species and cultivars are often regarded as 2 separate groups. Cultivars are further divided into Old Garden and Modern roses. Each group comprises different types, based, it is claimed, on the functional qualities of each plant, such as whether it is repeat-flowering, rather than on any historical, botanical, or genetical relationships. Flowers occur in a variety of forms (illustrated and described on p.172) and are single (4–7 petals), semidouble (8–20 petals), double (20–30 petals) or fully double (over 30 petals).

Many modern rose cultivars are sold under names other than the registered Plant Breeder's Rights (PBR) names; where this is the case, the plant is listed under its trade name, with the PBR name in brackets. Roses are illustrated on pp.172–87.

Species roses

Species, or wild, roses (including those interspecific hybrids that share most of the characteristics of their parent species) are either shrubs or climbers, mostly bearing single, 5-petaled, often fragrant flowers in summer, usually in one flush on short shoots from second-year wood: the flowers are followed by red, black, green, yellow, orange, or purple hips in fall.

Old Garden roses
This category is so large that it is divided into two groups. Roses in Group A are mostly of European origin, while those in Group B are hybrids between Oriental and European roses.

Group A
Alba—large, freely branching shrubs with only a few prickles on the stems. They bear clusters of 5–7 semi- to fully double, scented flowers in midsummer, on shoots from second-year wood. Have abundant, grayish-green leaves. Are very hardy. Most are good for borders and as hedges or as specimen plants.
Centifolia (or **Provence**)—lax, thorny shrubs that produce often scented, double to fully double flowers, borne singly or in 3s, in summer, on shoots from second-year wood. Leaves are matte, dark green. Are suitable for borders.
Damask—open shrubs with prickly stems and downy leaves. They produce often very fragrant, semi- to fully double flowers, borne singly or in loose clusters of 5–7 mainly in summer, on shoots from second-year wood; a few also flower on new wood in fall. Are suitable for borders or training against a support.
Gallica—shrubs of fairly dense, free-branching habit, with usually thorny stems, and mostly dull, dark green leaves. Produce mostly scented, single to fully double, richly colored flowers, often in clusters of 3, in summer on shoots from second-year wood. Are suitable for borders and as hedging.
Moss—often lax shrubs with a furry, mosslike growth on stems and calyces. Leaves are usually dark green. Usually fragrant, semi- to fully double flowers, often in clusters of 3 or more, are borne on very thorny shoots from second-year wood in summer. Are suitable for beds and borders.
Scots (or **Scotch**)—Suckering shrubs, selections or hybrids of *R. spinosissima*, of low, spreading, rarely upright habit, with prickly stems and dark green leaves. Occasionally scented, single to double flowers are solitary or borne in clusters of 3 or more, on short stems from second-year wood, usually in early summer. Are suitable for beds and borders.
Sweet Briar—Vigorous, free-branching shrubs with usually thorny stems and sweetly scented, dark green leaves. In summer, they bear usually scented, single to double flowers, singly or in clusters of up to 7, on short shoots from second-year wood. Use as hedges, as specimen plants, and in large borders.

Group B
Bourbon—large, open, repeat-flowering shrubs and climbing roses, often with long, smooth or prickly stems, which may be trained to climb. They have often glossy leaves and numerous scented, double or fully double flowers, borne commonly in 3s, in flushes in summer and usually fall. Flowers are borne on short shoots from second-year wood and on new wood. Are suitable for borders and for training over fences, walls and pillars.
Boursault—climbing roses with long, arching, usually smooth stems and dark green leaves. They bear slightly scented, semidouble or double flowers, singly or in clusters of 3, in early summer, on short shoots from second-year wood. Grow against a sheltered wall or fence.
China—spindly, repeat-flowering shrubs with mostly smooth stems, bearing only a few reddish-brown prickles, and glossy leaves. They produce sometimes scented, single to fully double flowers, singly or in clusters of 3–13, in flushes in summer–fall. Flowers are produced on short shoots from second-year wood and on new wood. Need a sheltered site. Are suitable for borders and walls.
Hybrid Musk—Vigorous, repeat-flowering shrubs with prickly stems and abundant foliage. They produce mainly double blooms, often very fragrant, either singly or in clusters of 2–7 or more, in flushes from midsummer to fall. Are good for shrub borders, and can be trained on walls.
Hybrid Perpetual—free-branching, repeat-flowering shrubs with upright, prickly growth and dark green leaves. They bear often scented, fully double flowers, held singly or in 3s, in flushes in summer–fall on shoots from second-year wood and on new wood. Are suitable for beds and borders.
Noisette—repeat-flowering climbing roses that bear clusters of 3–15 usually double to fully double flowers, with a slight spicy fragrance, in flushes in summer–fall. Flowers are borne on shoots from second-year wood, occasionally on new wood. Have generally smooth stems and glossy leaves. Are suitable for sheltered, south- or west-facing walls.
Portland (or **Damask Portland**)—upright, compact, repeat-flowering shrubs with thorny stems and usually dark green leaves. They produce usually scented, semi- to fully double flowers, held singly or in 3s, in flushes in summer–fall, mainly on shoots from second-year wood. Are suitable for beds and borders.
Sempervirens—vigorous, semievergreen climbing or rambler roses with shiny, light green leaves. Arching, thorny stems bear clusters of 3–15 unscented, semi- to fully double flowers in summer, on short stems from second-year wood. Are ideal for naturalizing or for growing on fences and pergolas.
Tea—repeat-flowering shrubs and climbing roses with smooth to thorny stems, sometimes bearing a few large, red prickles, and glossy, light or sometimes dark green leaves. They produce spicy-scented, slender-stemmed, semi- to fully double flowers, borne singly or in 3s, in flushes in summer–fall, on shoots from second-year wood and on new wood. Need a sheltered site. Are suitable for beds and borders and trained against walls.

Modern roses
Climber—often vigorous climbing roses with thorny, arching, stiff stems and usually dense, glossy, mid- to dark green foliage. They bear generally scented flowers in a variety of forms, singly or in clusters of 3–7 or more. Some bloom in summer only, on short shoots from second-year wood; many are repeat-flowering and also flower on new wood. Train against walls, fences or use to cover garden structures.
Climbing Miniature—Repeat-flowering, climbing roses with restrained, sparsely thorny growth. Clusters of 3–9 tiny, rarely scented, single to fully double flowers are borne in flushes in summer–fall, on shoots from second-year wood and on new wood. Grow against low walls, fences and pillars.
Floribunda (or **Cluster-flowered bush**)—repeat-flowering, free-branching shrubs of upright or bushy habit, usually with prickly stems and glossy, dark green leaves. Sometimes scented, single to double flowers are usually in clusters of 3–25, rarely solitary, and are produced continuously in summer–fall on shoots from second-year wood and on new wood. Are excellent for borders and as hedges.
Groundcover—trailing and spreading roses, mostly with prickly stems, producing often glossy leaves. They bear clusters of numerous, sometimes scented, single to fully double flowers; some flower in summer only, on short shoots from second-year wood; others are repeat-flowering, and also flower on new wood. Many bear flowers all along the stems. Are ideal for beds, banks, and containers, and for trailing over walls.
Hybrid Tea (or **Large-flowered bush**)—repeat-flowering, free-branching shrubs of upright or bushy habit, with usually prickly stems and glossy or matte, mid- to dark green leaves. Large, often scented, usually double flowers are borne singly or in 3s in flushes in summer–fall on shoots from second-year wood and on new wood. Use in formal borders, as hedges and for cut flowers.
Miniature—repeat-flowering shrubs with very compact, rarely spreading, sparsely prickly, short growth. Sprays of 3–11 tiny, rarely scented, single to fully double flowers are borne in flushes in summer–fall on very short shoots from second-year wood and on new wood. Have tiny leaves. Are suitable for edging paths and driveways, and for rock gardens, raised beds, and container growing.
Patio (or **Dwarf cluster-flowered bush**)—repeat-flowering shrubs with compact growth, sometimes prickly stems, and usually glossy leaves. They bear clusters of 3–11 usually unscented, single to double flowers in flushes in summer–fall, on shoots from second-year wood and on new wood. Are ideal for beds, borders, and as hedges and for growing in containers.
Polyantha—compact, repeat-flowering shrubs with sparsely prickly stems and glossy leaves. Sprays of many small, rarely scented, single to double flowers are borne in summer–fall on shoots from second-year wood and on new wood. Are suitable for beds and borders, as hedges, and for containers.
Rambler—a diverse group of vigorous roses with long, arching, prickly stems and dense, usually glossy foliage. They have clusters of 3–21 sometimes scented, single to fully double flowers, mainly in summer, on short shoots from second-year wood and on new wood. Train over walls, fences, pergolas, and into trees.
Rugosa—Hardy shrubs with tough, wrinkled, usually bright green leaves and prickly stems. Most bear scented, single, or semidouble flowers, in clusters of 3–11, in summer–fall, on short shoots from second-year wood. They are often followed by tomatolike, usually red hips. Use as hedges, for beds, and borders and as specimen plants.
Shrub—Roses in this diverse group are usually larger than bush roses (a general term used to describe Floribundas, Hybrid Teas, Miniatures, Patio roses, and occasionally Groundcover roses). They often have prickly stems and bear usually scented, semidouble to double flowers in few- to many-flowered clusters, sometimes singly, in summer–fall. Some bloom in summer only from second-year wood; most are repeat-flowerers and also flower on new wood. Use as hedges, in beds and borders, and as specimen plants.

***R.* Abraham Darby ('Auscot')**
illus. p.183.
***R.* Absolutely Fabulous.** See *R.* Julia Child ('Wekvossutono').
***R.* 'Agnes'.** Bushy Rugosa rose with upright stems. H 6ft (2m), S 4ft (1.2m). Cupped, double, scented, light yellow flowers, 3in (8cm) across, are borne in early summer (a few later). Leaves are rough, ribbed, and clear green. Z3–9
***R.* 'Aimée Vibert'.** Noisette rose with smooth stems and glossy, dark green leaves. H 10–15ft (3–5m), S 10ft (3m). Bears fully double, scented white flowers, 2½in (6cm) across, from summer–fall. May be grown as a shrub. Z5–9
***R.* 'Alba Semiplena'**, syn. *R.* x *alba* 'Semiplena'. Vigorous, bushy Alba rose. H 7ft (2.2m), S 5ft (1.5m). Bears sweetly scented, flat, semidouble, white flowers, 3in (7cm) across, in midsummer. Leaves are grayish-green. Z6–9
***R.* 'Albéric Barbier'** illus. p.184.
***R.* 'Albertine'** illus. p.185.
***R.* Alec's Red ('Cored')** illus. p.181.
***R.* Alexander ('Harlex')** illus. p.180.
***R.* 'Alfred de Dalmas'** of gardens. See *R.* 'Mousseline'.
***R.* 'Alister Stella Gray'.** Noisette climbing rose with long, vigorous, arching stems and neat, mid-green leaves. H 15ft (5m), S 10ft (3m). Quartered-rosette, fully double, musk-scented, yolk-yellow flowers, fading to white, 2½in (6cm) across, are borne freely from summer–fall. Z5–9
***R.* 'Aloha'** illus. p.185.
***R.* Amber Queen ('Harroony').** Spreading, Floribunda bush rose with abundant, reddish foliage. H 20in (50cm), S 2ft (60cm). Amber flowers, 3in (8cm) across, are fragrant, rounded, and fully double; repeat-flowering from summer–fall. Z6–9
***R.* 'American Pillar'.** Vigorous Rambler of lax growth, with leathery, glossy, mid-green foliage. H to 15ft (5m), S 12ft (4m). Large clusters of cupped, single, carmine-red flowers, 2in (5cm) across, with white eyes, are borne freely in midsummer, and followed by scarlet hips. Z6–9
***R.* 'Angel Face'.** Slow-growing Floribunda (prune only lightly) with dark green foliage. H 32in (80cm), S 28in (70cm). Bears clusters of double, very strongly scented, lilac flowers with ruffled petals, 4in (10cm) across, almost continuously. Z5–9

***R.* 'Arthur Bell'** illus. p.182.
***R.* Augusta Luise ('Tangust')**, syn. *R.* 'Rachel', illus. p.183.
***R.* 'Ballerina'** illus. p.178.
R. banksiae, syn. *R. banksiae* var. *alba, R. banksiae* 'Alba Plena' (Double white Banksian rose). Climbing Species rose with small, mid-green leaves. H 40ft (12m), S 20ft (6m). In late spring, bears dense clusters of many rosette-shaped, violet-scented, double, white flowers, 1in (2.5cm) across, with notched petals. Protect from frost. Prune only by cutting out old wood. Z6–9. **'Lutea'** (syn. var. *lutea*; Yellow Banksian rose) bears fully double, yellow flowers, 2cm (¾in) across.
***R.* 'Baron Girod de l'Ain'.** Vigorous Hybrid Perpetual rose with pale green leaves. H 4ft (1.2m), S 3ft (1m). From summer–fall, produces cupped, fully double, scented, crimson flowers, 4in (10cm) across, with wavy-margined petals neatly edged with white piping. Z6–9
***R.* 'Belle de Crécy'.** Gallica rose of rather lax growth, with bristly stems and dark green leaves with long leaflets. H 4ft (1.2m), S 3ft (1m). In a single flush in summer, produces quartered-rosette, fully double, deep pink flowers, 3in (8cm) across, with white petal-backs and a spicy fragrance. Z7–10
***R.* Benjamin Britten ('Ausencart')** illus. p.175.
***R.* Beverly ('Korpauvio')**, syn. *R.* Pink Perfection, illus. p.180.
***R.* 'Blanche Moreau'.** Moss rose of lax growth with dark green leaves. H 5ft (1.5m), S 4ft (1.2m). Bears fragrant, cupped, fully double, white flowers, 3in (7cm) across, with brownish green "mossing" in summer. Z6–9
***R.* 'Blessings'.** Vigorous Hybrid Tea with large, dark green leaves. H 3½ft (1.1m), S 30in (75cm). Slightly scented, urn-shaped, fully double, salmon-pink flowers, 4in (10cm) across, are borne from summer–fall. Z6–9
***R.* Blue Moon.** See *R.* Mainzer Fastnacht ('Tannacht').
***R.* 'Blush Noisette'.** See *R.* 'Noisette Carnée'.
***R.* 'Blush Rambler'.** Vigorous Rambler with long, arching stems and abundant glossy, pale green leaves. H 12ft (4m), S 15ft (5m). Open clusters of cupped, semidouble, light pink flowers, 1½in (4cm) across, are borne in late summer. Good scrambler for an arch, pergola or tree. Z6–9
***R.* 'Bobbie James'.** Rampant Rambler with reddish-green young leaves, turning glossy, bright green when mature. H to 30ft (10m), S 20ft (6m). Large clusters of cupped, semidouble, musk-scented, creamy-white flowers, 1½in (4cm) across, are produced in summer. Z6–9
***R.* Bonica ('Meidomonac')**, syn. *R.* 'Bonica '82'. Vigorous, spreading Shrub rose with plentiful, glossy foliage. H 3ft (1m), S 5ft (1.5m). Produces large sprays of slightly fragrant, cupped, double, ruffled, bright, pale pink flowers, 2½in (6cm) across, repeatedly from summer–fall. Z6–9
***R.* Boscobel ('Auscousin')** illus. p.178.
***R.* 'Boule de Neige'.** Upright Bourbon rose with stiff stems and glossy, dark green leaves. H 5ft (1.5m), S 4ft (1.2m). Very fragrant, reflexed, pompon-shaped, fully double, white flowers, 3in (8cm) across, are produced from summer–fall. Z5–9
***R.* Breath of Life ('Harquanne').** Stiff, upright Climber with large, semi-glossy leaves. H 8ft (2.5m), S 7ft (2.2m). Scented, rounded, fully double, apricot to apricot-pink flowers, 4in (10cm) across, are borne in summer and again in fall. Z6–9
***R.* Brother Cadfael ('Ausglobe').** Upright "English" Shrub rose with few prickles. H 5ft (1.5m), S 3ft (90cm). Bears deeply cupped, double, fragrant, mid-pink flowers, 5in (12cm) across, on short stalks, surrounded by plentiful foliage. Some repeat-flowering in fall. Z5–9
***R.* 'Buff Beauty'** illus. p.177.
***R.* Burgund 81 ('Korgund')**, syn. *R.* Loving Memory, illus. p.181.
***R.* Burgundy Ice ('Prose')** illus. p.181.
***R. californica*.** Shrubby Species rose with small, dull, mid-green leaves. H 7ft (2.2m), S 6ft (2m). Fragrant, flat, single, lilac-pink flowers, 1½in (4cm) across, are borne freely in midsummer, then sparsely in fall. Z6–9
***R.* 'Camaïeux'.** Gallica of compact habit with small, rough, dull green leaves. H and S 32in (80cm). Cupped, fully double, lightly scented, pink flowers, 3in (7cm) across, striped with crimson-purple to lilac-gray, are borne in summer. Z4–8
***R.* 'Canary Bird'.** See *R. xanthina* 'Canary Bird'.
***R.* 'Capitaine John Ingram'.** Lax Moss rose with red-brown moss and dark green foliage. H 4ft (1.2m), S 3ft (1m). In summer, bears fragrant, button-eyed rosette, fully double, rich dark crimson to purple flowers, 3in (8cm) across; petals are lilac-pink on the reverse. Z6–9
***R.* 'Cardinal de Richelieu'** illus. p.175.
***R.* Cardinal Hume ('Harregale')** illus. p.175.
***R.* 'Cécile Brünner'.** Vigorous, upright China rose with pointed, mid-green leaves. H 2½ft (75cm), S 2ft (60cm). Bears abundant, sweetly scented, urn-shaped, fully double, light pink flowers, 1½in (4cm) across, fading to pearl, from summer–fall. Z6–9.
***R.* 'Céleste'**, syn. *R.* 'Celestial', illus. p.173.
***R.* 'Celestial'.** See *R.* 'Céleste'.
***R.* x *centifolia* 'Cristata'**, syn. *R.* 'Chapeau de Napoléon', *R.* 'Cristata' (Crested moss). Leafy, lanky Centifolia rose. H 5ft (1.5m), S 4ft (1.2m). During summer, very fragrant, cupped, fully double, pink flowers, 3½in (9cm) across, with crested, mossy sepals, are borne on nodding stems amid matte, bright, pale green foliage. May be grown on a support. Z6–9. **'Muscosa'** (Common moss, Old pink moss) differs in having flowers with sepals, calyces and stems covered in a sticky, aromatic "moss."
***R.* 'Cerise Bouquet'.** Very vigorous Shrub rose of arching habit, with very prickly stems bearing small green leaves. H and S to 11ft (3.5m). In summer, produces a spectacular display of flat, semidouble, cherry-red flowers, 2½in (6cm) across. Z6–9
***R.* 'Champagne Moment'.** See *R.* Lions-Rose ('orvanaber').
***R.* Chandos Beauty ('Harmisty')** illus. p.178.
***R.* 'Chapeau de Napoléon'.** See *R.* x *centifolia* 'Cristata'.
***R.* Charles Darwin ('Auspeet').** "English" Shrub rose with mid-green foliage and very few prickles. H 3ft (1m), S 28in (70cm). Cupped, lemon-scented, fully double, rich yellow flowers, fading to butter-yellow, 5in (12cm) across, are borne in summer and again in fall. Z6–9
***R.* 'Charles de Mills'.** Bushy Gallica rose with smooth arching stems and plentiful, mid-green leaves. H and S 4ft (1.2m). Very fragrant, quartered-rosette, fully double, crimson-purple flowers, 4in (10cm) across, are borne in summer. May be grown on a support. Z6–9
***R.* Charlotte ('Auspoly')** illus. p.182.
***R.* Chicago Peace ('Johnago').** A vigorous, shrubby, large-flowered sport of *R.* 'Madame A. Meilland'. H 4ft (1.2m), S 3ft (1m). Has abundant, glossy foliage. Clusters of flowers in brighter, deeper colors of crimson and peach are borne in summer and again in fall. Z5–9
***R.* 'Chilterns'.** See *R.* Mainaufeuer ('Kortemma').
***R. chinensis* var. *minima*.** See *R.* 'Pompon de Paris'.
***R.* 'Chrysler Imperial'.** Upright Hybrid Tea with dark green leaves. H 3ft (1m), S 2ft (60cm). From summer–fall, bears high-centered, fully double, very fragrant, deep red flowers, 5in (12cm) across. Good for cutting. Z6–11
***R.* Claire Austin ('Ausprior')** illus. p.182.
***R.* 'Climbing Cécile Brünner'** illus. p.185.
***R.* 'Climbing Etoile de Hollande'.** Climber with erect growth and dark green foliage. H 20ft (6m), S 15ft (5m). Produces cupped, double, very fragrant, dark crimson flowers, 4½in (11cm) across, mainly in summer and intermittently to fall. Z6–9
***R.* 'Climbing Iceberg'** illus. p.184.
***R.* 'Climbing Lady Hillingdon'.** Tea rose, a sport of *R.* 'Lady Hillingdon'. H 15ft (5m), S 8ft (2.5m). Has dark green leaves on twiggy, reddish-green stems, and continously bears pendulous, pointed, double, rich apricot-yellow flowers, 4½in (11cm) across. Z5–10
***R.* 'Climbing Madame Caroline Testout'** illus. p.185.
***R.* Cocktail ('Meimick')** illus. p.186.
***R.* 'Commandant Beaurepaire'.** Vigorous, spreading Bourbon rose. H 6ft (2m), S 4ft (1.2m). Cupped, double, pink flowers with purple and white stripes, 3in (7cm) across, and with a penetrating, lemony scent, are borne in summer. Pale green leaflets have wavy margins. Z5–9
***R.* 'Compassion'** illus. p.185.
***R.* 'Complicata'** illus. p.174.
***R.* 'Comte de Chambord'** of gardens. See *R.* 'Madame Boll'.
***R.* Congratulations.** see *R.* Sylvia ('Korlift').
***R.* 'Conrad Ferdinand Meyer'.** Tall vigorous, arching, very prickly Shrub rose. H 8ft (2.5m), S 6ft (2m). Bright green leaves are large and rough-textured. Cupped, fully double, silvery pink flowers, 4in (10cm) across, are richly fragrant and borne repeatedly in summer. Z6–9
***R.* Constance Spry** illus. p.174.
***R.* 'Cornelia'.** Vigorous Hybrid Musk of mounding habit. H and S 5ft (1.5m). Bears clusters of strongly musk- and sweet-scented, rosette-shaped, double, pink flowers flushed with copper at the centers, 2in (5cm) across, from summer–fall. Z5–10
***R.* Crazy For You.** See *R.* Fourth of July ('Wekroalt').
***R.* 'Crépuscule'.** Noisette with long growths and mid-green leaves, purple when young. H and S 10ft (3m). Produces small clusters of double, musk-scented, deep rich copper flowers, fading to buff, 4in (10cm) across. Summer flowering, plus a few later flowers. Z7–11
***R.* 'Cristata'.** See *R.* x *centifolia* 'Cristata'.
***R.* Crown Princess Margareta ('Auswinter').** "English" Shrub rose with long, arching stems and dark, shiny leaves. H 5½ft (1.7m), S 5ft (1.5m). Bears cupped, fully double, fruit-scented, rich apricot flowers, 4in (10cm) across, singly and in small clusters. Repeat-flowering. Z5–11
***R.* 'Dainty Bess'.** Bushy Hybrid Tea with leathery leaves. H 3ft (1m), S 2ft (60cm). Bears flat, single, lightly scented, pale pink flowers, 4½in (11cm) across, with conspicuous purple filaments, from summer–fall. Z5–9
***R.* 'Dame du Coeur'**, syn. *R.* 'Queen of Hearts'. Vigorous, upright Hybrid Tea with medium-dark, semi-glossy leaves. H 4ft (1.25m), S 3ft (1m). Bears large, scented, pale crimson or cherry-red flowers, 5in (12cm) across, usually singly but occasionally in clusters. Repeats well. Z4–9
***R.* 'Danse du Feu'**, syn. *R.* 'Spectacular'. Vigorous, stiffly branched Climber with abundant, glossy foliage. H and S 8ft (2.5m). Bears slightly scented, rounded, semidouble, scarlet flowers, 3in (8cm) across, in summer, again in fall. Z6–9
***R.* Darcey Bussell ('Ausdecorum').** Compact "English" Shrub rose with matte, mid-green leaves. H 3ft (1m), S 32in (80cm). Fragrant, cupped, fully double, deep crimson flowers, 4in (10cm) across, aging to purple shades, are produced in summer and again in fall. Z6–9
***R.* 'De La Maître d'Ecole'.** Bushy, spreading Gallica rose with bright, fresh green foliage. H 4ft (1.2m), S 3ft (1m). Bears fragrant, quartered-rosette, fully double, carmine to light pink flowers, 4in (10cm) across, in summer. Z6–9
***R.* Desdemona ('Auskindling').** Bushy, vigorous, "English" Shrub rose with glossy mid-green leaves. H 4½ft (1.4m), S 3ft (1m). Bears fruit-scented, cupped, palest shell-pink flowers, fading to pure white, 3in (8cm) across, from summer–fall. Z5–11
***R.* 'Don Juan'.** Vigorous, upright, prickly Climber with long, strong stems and tough, dark green foliage. H 12ft (4m), S 8ft (2.5m). Fragrant, dark crimson flowers with the form of a Hybrid Tea rose, 4in (10cm) across, are borne singly or in small clusters, followed by orange hips; repeat flowering. Can be used as a pillar rose; does especially well in hot areas. Z5–9
***R.* 'Doris Tysterman'.** Vigorous, upright Hybrid Tea rose with large, glossy, dark green leaves. H 4ft (1.2m), S 30in (75cm). Bears slightly scented, pointed, fully double, orange-apricot flowers, 4in (10cm) across, in summer, again in fall. Z6–9
***R.* 'Dorothy Perkins'.** Lax Rambler with small, glossy, dark green leaves. H and S 10ft (3m). Bears dense clusters of rosette-shaped, double, bright pink flowers, 1¼in (3cm) across, in late summer. Z4–10
***R.* 'Dortmund'** illus. p.186.
***R.* Double Delight ('Andeli')** illus. p.180.

***R.* Dublin Bay ('Macdub')** illus. p.186.
***R.* Duftwolke ('Tanellis')**, syn. *R.* Fragrant Cloud. Bushy, dense Hybrid Tea rose with dark green foliage. H 30in (75cm), S 2ft (60cm). Very fragrant, rounded, double, dusky-scarlet flowers fading to salmon-pink, 4½in (11cm) across, are borne freely from summer–fall. Z6–9
***R.* Duftzauber '84 ('Korzaun')**, syn. *R.* 'Royal William', illus. p.180.
***R.* 'Easlea's Golden Rambler'.** Vigorous, arching Rambler with plentiful, leathery foliage. H 20ft (6m), S 15ft (5m). Strongly scented, loose, rounded, fully double, yellow flowers fading to pale, 4in (10cm) across, are borne, usually in clusters, during summer. Z6–9
***R.* Easy Does It ('Harpagent')** illus. p.183.
***R.* Easy Going ('Harflow')** illus. p.182.
***R.* Ebb Tide ('Weksmopur')**, syn. *R.* Purple Eden. Vigorous, upright Floribunda rose with dark, semi-glossy leaves. H 3ft (1m), S 32in (80cm). Continuously bears flushes of impressive clusters of 3–10, fully double, dark purple, flowers, 3½in (9cm) across, with a strong, sweet, spicy scent. Z5–9
***R.* 'Eden Rose '88'.** See *R.* Pierre de Ronsard ('Meiviolin').
R. eglanteria. See *R. rubiginosa*.
***R.* Eglantyne ('Ausmak').** Slender, upright, prickly "English" Shrub rose. H 4½ft (1.3m), S 3ft (1m). Produces clusters of fully double, cupped and rosette-shaped, tea-scented, pastel pink flowers, 4in (10cm) across. Repeat flowering. Z5–9
***R.* Elina ('Dicjana')**, syn. *R.* 'Peaudouce'. Vigorous, upright Hybrid Tea rose with abundant, reddish foliage. H 5ft (1.5m), S 30in (75cm). Lightly scented, rounded, fully double, ivory-white flowers, 6in (15cm) across, with lemon-yellow centers, are borne freely from summer–fall. Z6–9
***R.* Elle ('Meibdéros').** Strong-growing Hybrid Tea with dark, shiny, healthy leaves. H 4½ft (1.3m), S 32in (80cm). Fully double, high-centered, very sweet-scented, pink flowers, 5in (12cm) across, with pale peach petal-backs, are borne, usually singly, on long stems. Repeats well. Z5–10
***R.* 'Emily Gray'** illus. p.187.
***R.* 'Empereur du Maroc'.** Compact, shrubby Hybrid Perpetual rose with dark green leaves. H 4ft (1.2m), S 3ft (1m). Bears intensely fragrant, quartered-rosette, fully double, velvety maroon-crimson flowers, 4in (10cm) across, freely in a single flush in summer, sparsely in fall. Z6–9
***R.* Escapade ('Harpade').** Dense, vigorous Floribunda with glossy, light green foliage. H 30in (75cm), S 2ft (60cm). Fragrant, cupped, semidouble, lilac-pink flowers with white eyes, 3in (8cm) across, are borne freely from summer–fall. Z6–9
***R.* Europeana.** Healthy and vigorous Floribunda rose that repeats well with flowers that do not fade or brown in the sun. H and S 32in (80cm). Rosette-shaped, glowing crimson flowers, 2½in (6cm) across, are profusely borne in large, flat-topped clusters. New leaves are beetroot red, aging to dark green. Z5–9
***R.* Evelyn ('Aussaucer')** illus. p.177.
***R.* 'Excelsa'.** Lax Rambler with abundant small glossy, mid-green leaves. H 12ft (4m), S 10ft (3m). In late summer, produces dense clusters of rosette-shaped, fully double crimson flowers, 1¼in (3cm) across. Z5–9
***R.* Falstaff ('Ausverse').** Shrub rose with long stems and dark green leaves. H and S 5ft (1.5m). Bears cupped, loose rosette or quartered, rich dark crimson flowers, 3½in (9cm) across, with a strong, sweet scent, singly or in tight clusters. Can be trained as a climber. Z5–11
***R.* 'Fantin-Latour'** illus. p.173.
***R.* 'Felicia'** illus. p.173.
***R.* 'Félicité Parmentier'.** Vigorous, compact, upright Alba rose with bluish-green leaves. H 4½ft (1.3m), S 4ft (1.2m). Fragrant, quartered-rosette, fully double, pale translucent pink flowers fading to white, 2½in (6cm) across, are borne in midsummer. Good as a hedge. Z6–9
***R.* 'Félicité Perpétue'** illus. p.184.
***R.* 'Fellemberg'.** Sometimes known as *R.* 'Fellenberg'. Vigorous, shrubby China-Noisette hybrid with purplish-green leaves. H 8ft (2.5m), S 6ft (2m). Clusters of sweetly scented, rounded to cupped, fully double flowers, 2in (5cm) across, in shades of light crimson, are borne from summer–fall. Prune to grow as a bedding rose or support as a climber. Z6–9
***R.* Fellowship ('Harwelcome')** illus. p.183.
***R.* 'Ferdinand Pichard'** illus. p.178.
***R. filipes* 'Kiftsgate'** illus. p.184.
***R.* Flower Carpet.** See *R.* Heidetraum ('Noatraum').
***R. foetida* 'Persiana'**, syn. *R.* 'Persian Yellow'. Upright, arching Species rose. H and S 5ft (1.5m). Cupped, double, bright yellow flowers, 1in (2.5cm) across, are borne in a single flush in summer. Glossy leaves are prone to blackspot. Prune spent branches only. Best in full sun. Z6–9
***R.* 'Fortune's Double Yellow'.** See *R.* x *odorata* 'Pseudindica'.
***R.* For Your Eyes Only ('Cheweyesup')** illus. p.178.
***R.* Fourth of July ('Wekroalt')**, syn. *R.* Crazy for You, illus. p.179.
***R.* Fragrant Cloud.** See. *R.* Duftwolke ('Tanellis').
***R.* 'Francis E. Lester'.** Vigorous, arching Rambler with glossy, dark green foliage. H 20ft (6m), S 12ft (4m). Large clusters of cupped, single, fragrant, apple blossom-pink flowers, 2in (5cm) across, are borne freely in summer. Z4–9
***R.* 'François Juranville'.** Vigorous, arching Rambler. H 20ft (6m), S 15ft (5m). Bears clusters of apple-scented, rosette, fully double, light copper-pink flowers, 3in (8cm) across, in summer, and occasionally thereafter. Produces a mass of small, glossy dark green leaves. Z6–9
***R.* 'Frau Dagmar Hartopp'.** See *R.* 'Fru Dagmar Hastrup'.
***R.* 'Frau arl Druschki'.** Hybrid Tea with strong stems and dark green leaves. H 5ft (1.5m), S 4ft (1.2m). Produces high-centered, fully double, milk-white flowers, 4½in (11cm) across, from summer–fall. Z4–9
***R.* 'Friesia'**, syn. *R.* 'Korresia'. Compact Floribunda rose with glossy, healthy, dark green leaves. H 30in (75cm), S 2ft (60cm). Bears open sprays of strongly scented, urn-shaped, double flowers, 3in (8cm) across, with wavy, yellow petals, in summer and again in fall. Z7–10
***R.* 'Fritz Nobis'.** Vigorous, upright Shrub rose with small green leaves. H 7ft (2.2m), S 6ft (1.8m). In summer, bears abundant, cupped, double, scented, pink flowers with coppery petal-backs, 3½in (9cm) across, fading to pale pink. Z6–10
***R.* 'Fru Dagmar Hastrup'**, syn. *R.* 'Frau Dagmar Hartopp'. Sturdy, compact Rugosa of spreading habit, with bright green, crinkled leaves. H 3ft (1m), S 4ft (1.2m). Shallowly cupped, single, clove-scented, silvery pink flowers, 3½in (9cm) across, are borne in summer and again in fall, alongside tomato-shaped, red hips. Z3–8
***R.* 'Frühlingsmorgen'.** Open Shrub rose with arching stems and grayish-green foliage. H 6ft (2m), S 5ft (1.5m). In late spring, bears sweet-scented, cupped, single, deep pink flowers, 5in (12cm) across, with primrose-yellow centers, fading to white, and crimson stamens. Z3–8
R. gallica* var. *officinalis, syn. *R. officinalis* (Apothecary's rose, Red rose of Lancaster). Gallica of compact, rounded habit with small, rough, mid-green leaves. H to 32in (80cm), S 3ft (1m). In summer, bears flat, semidouble, pinkish-red flowers, 3in (8cm) across, with a sweet scent, followed by orange-red hips. H7.
'Versicolor' illus. p.174.
***R.* Gardener's Glory ('Chewability')** illus. p.187.
***R.* Garden of Roses ('Korfloci')**, syn. *R.* 'Joie de Vivre', illus. p.179.
***R.* Geoff Hamilton ('Ausham').** Vigorous "English" Shrub rose with mid-green leaves. H 5ft (1.5m), S 4½ft (1.3m). Almost continuously through summer–fall, rounded buds open singly or in clusters to strongly sweet-scented, rosette-shaped, fully double, pale pink flowers intensifying to rose-pink in the center, 3½in (9cm) across. Z5–11
***R.* 'Geranium'.** See *R. moyesii* 'Geranium'.
***R.* Gertrude Jekyll ('Ausbord')** illus. p.175.
***R.* 'Ghislaine de Féligonde'.** Free-branching Shrub or Rambler with glossy, mid-green leaves and smooth stems. H and S 8ft (2.5m) Bears large clusters of cupped, double, scented, pale apricot flowers, 2in (5cm) across, in early summer, with a few pink flowers borne later. Z5–11
***R.* 'Gipsy Boy'.** See *R.* 'Zigeunerknabe'.
R. glauca, syn. *R. rubrifolia* (illus. p.176). Vigorous, arching Species rose with attractive plum-purple foliage and reddish green stems. H 6ft (2m), S 5ft (1.5m). Flat, single, pale-centered, cerise-pink flowers, ¾in (2cm) across, with gold stamens, in a single flush in summer, are followed by red hips in fall. Z3–8
***R.* 'Gloire de Dijon'** illus. p.184.
***R.* 'Gloire des Mousseuses'.** Vigorous, upright Moss rose with plentiful, light green foliage. H 4ft (1.2m), S 3ft (90cm). In summer, bears fragrant, cupped to flat, fully double flowers, 5in (12cm) across. These are bright pink, paling to blush-pink, with light green "mossing." Z6–9
***R.* Gold Medal ('Aroyqueli').** Upright, bushy Hybrid Tea with large, dark leaves. H 5ft (1.5m), S 3ft (1m). High-centered, later cupped, double, fruit-scented, long-stemmed, yellow flowers, fading to cream with pink edges, 4½in (11cm) across, are borne singly or in clusters. Repeat-flowering. Z5–9
***R.* Golden Celebration ('Ausgold').** "English" Shrub rose with glossy, mid-green leaves and near prickle-free stems. H and S 4ft (1.2m). From summer–fall, bears deeply cupped, double, fragrant, golden-yellow flowers, 3½in (9cm) across. Z6–9
***R.* 'Golden Showers'.** Stiff, upright Climber with thick stems and glossy, mid-green foliage. H 10ft (3m), S 6ft (2m). In summer and again in fall, bears many sweet-scented, pointed, double, clear yellow flowers, 4in (10cm) across, that open flat. May be pruned to grow as a shrub. Z6–9
***R.* Golden Wedding ('Arokris')** illus. p.182.
***R.* 'Golden Wings'.** Bushy, spreading Shrub rose with light green foliage. H 3½ft (1.1m), S 4½ft (1.3m). Bears fragrant, shallowly cupped, single, pale lemon-yellow flowers, 5in (12cm) across, with amber-colored stamens, from summer–fall, followed by large orange hips. Z6–9
***R.* 'Goldfinch'.** Vigorous, arching Rambler with light green leaves on smooth stems. H 8ft (2.5m), S 6ft (2m). In summer, produces lightly scented, rosette, double, deep yellow flowers, 1½in (4cm) across, that fade to creamy white. Z5–9
***R.* Grace ('Auskeppy').** Bushy "English" Shrub rose with light green leaves. H 4ft (1.2m), S 3ft (1m). Bears clusters of rosette-shaped, fully double, tea-scented, apricot flowers, 3½in (9cm) across. Repeats well. Z5–10
***R.* Graham Thomas ('Ausmas')** illus. p.176.
***R.* 'Grandpa Dickson'**, syn. *R.* 'Irish Gold'. Neat, upright Hybrid Tea rose with glossy, dark green leaves. H 30in (75cm), S 2ft (60cm). Bears lightly fruit-scented, high-centered, fully double, primrose-yellow flowers, 5in (12cm) across, from summer–fall. Z6–9
***R.* 'Great Maiden's Blush'.** See *R.* 'Maiden's Blush'.
***R.* 'Gruß an Aachen'.** Vigorous Floribunda with leathery, dark green foliage. H and S 30in (75cm). Rounded, fully double, scented, pale pink to creamy white flowers, 3in (8cm) across, are borne from summer–fall. Z4–9
***R.* 'Gruß an Teplitz'.** Vigorous China rose with small, mid-green leaves. H 6ft (2m), S 5ft (1.5m). Cupped, loosely double, scented, bright scarlet-crimson flowers, 2½in (6cm) across, usually in clusters, are borne continuously. Z6–11
***R.* 'Guinée'** illus. p.186.
***R.* Handel ('Macha').** Stiff, upright Climber with glossy, dark green leaves. H 10ft (3m), S 7ft (2.2m). Sweet-scented, urn-shaped, double, cream flowers, 3in (8cm) across, edged with pale crimson, are borne in clusters in summer and again in fall. Z6–9
***R.* 'Hansa'.** Vigorous Rugosa hybrid with ferocious prickles and pale green, crinkled leaves. H 6ft (2m), S 5ft (1.5m). Long, elegant buds open into loose, crumpled-looking, semidouble flowers with a strong, sweet scent, 4in (10cm) across, in small clusters, followed by large, vermilion hips. Flowers continuously throughout summer. Can be grown as a hedge. Z3–8

***R.* Heidetraum ('Noatraum')**, syn. *R.* Flower Carpet, *R.* Pink Flower Carpet, illus. p.179.

***R.* 'Henri Martin'** illus. p.175.

***R.* Heritage ('Ausblush').** Shrub rose with long, lax, almost prickle-free stems and large, dark green, glossy leaves. H 4ft (1.2m), S 3ft (1m). Flowers are globular, pale salmon-pink at the center and cream or white toward the outside, 3½in (9cm) across, with a strong, sweet scent, and borne in clusters; repeats well. Z5–10

***R.* 'Hermosa'.** Neat China rose with thin branches and delicate, light green leaves. H 3ft (1m), S 2ft (60cm). Rounded, double, scented, rose-pink flowers with a hint of lilac, 3in (7cm) across, borne freely from summer–fall. Z6–9

***R.* 'Honorine de Brabant'.** Vigorous, bushy, sprawling Bourbon rose with plentiful, light green foliage. H and S 5½ft (1.7m). Fragrant, cupped, double flowers, 2½in (6cm) across, light rose-pink, marked with irregular crimson stripes and slashes, are produced from summer–fall. Z6–9

***R.* Hot Chocolate.** See *R.* Hot Cocoa ('Wekpaltlez').

***R.* Hot Cocoa ('Wekpaltlez')**, syn. *R.* Hot Chocolate. Prickly, upright Floribunda with semi-glossy, dark green leaves. H 3ft (1m), S 4ft (1.2m). In summer–fall, repeatedly bears striking, cupped, double, orange-brown flowers, 3in (7cm) across. Z6–9

***R.* Iceberg.** See *R.* Schneewittchen ('Korbin').

***R.* Ingrid Bergman ('Poulman').** Upright, branching Hybrid Tea rose with leathery, glossy, dark green foliage. H 32in (80cm), S 26in (65cm). Produces sweetly scented, urn-shaped, double, Turkey-red flowers, 4½in (11cm) across, from summer–fall. Z6–9

***R.* Intrigue ('Jacum')** illus. p.180.

***R.* 'Irish Gold'.** See *R.* 'Grandpa Dickson'.

***R.* 'Ispahan'.** Vigorous, bushy, dense Damask rose with semievergreen, gray-green foliage. H 6ft (2m), S 5½ft (1.7m). In early to midsummer, bears fragrant, cupped, double, clear mid-pink flowers (with a button eye), 3in (8cm) across. Z6–9

***R.* Jacqueline du Pré ('Harwanna')** illus. p.172.

***R.* 'Jacques Cartier'.** See *R.* 'Marchesa Boccella'.

***R.* Jasmina ('Korcentex')** illus. p.186.

***R.* 'Jenny Duval'.** See *R.* 'Président de Sèze'.

***R.* 'Joie de Vivre'.** See *R.* Garden of Roses.

***R.* 'Joseph's Coat'.** Vigorous, branching Climber or Shrub rose with dark green leaves. H 10ft (3m), S 4ft (1.2m) as a climber or 3ft (1m) as a shrub. Showy clusters of urn-shaped to cupped, semidouble, yellow flowers, 3in (8cm) across, suffused orange-pink and red, are borne from summer–fall. Z6–10

***R.* Julia Child ('Wekvossutono')**, syn. *R.* Absolutely Fabulous, illus. p.182.

***R.* 'Julia's Rose'.** Spindly, branching Hybrid Tea rose with reddish-green leaves. H 30in (75cm), S 1½ft (45cm). In summer–fall, produces faintly scented, high-centered, double, brownish-pink to buff flowers, 4in (10cm) across. Good for flower arrangements. Z7–10

***R.* 'Just Joey'** illus. p.183.

***R.* Karen Blixen ('Poulari')**, syn. *R.* 'Silver Anniversary', illus. p.177

***R.* 'Kathleen Harrop'.** Bourbon rose, a slightly less vigorous sport of *R.*Zéphirine Drouhin'. H 8ft (2.5m), S 6ft (2m). Bears sweetly scented, cupped, double, rose-pink flowers, 3in (8cm) across, with darker backs and fewer petals than its parent. Z6–9

***R.* Kent ('Poulcov')** illus. p. 177.

***R.* 'Kew Rambler'.** Vigorous Rambler with mid-green leaves. H 15ft (5m), S 12ft (4m). Large clusters of musk-scented, cupped, single, scented pink flowers, 1½in (4cm) across, each with a white eye and yellow stamens, are borne in summer, followed by orange hips. Z5–9

***R.* Knock Out ('Radrazz')** illus. p.180.

***R.* 'Königin von Dänemark'**, syn. *R.* 'Queen of Denmark'. Vigorous, compact, Alba rose with glaucous, dark green leaves. H 5ft (1.5m), S 4ft (1.2m). Clusters of scented, quartered-rosette, fully double, deep pink flowers, 3½in (9cm) across, with pink button eyes, are borne in a single flush in summer. Z3–8

***R.* Kordes Robusta ('Korgosa')**, syn. *R.* 'Robusta'. Vigorous, stiff-growing Rugosa with very prickly stems and wrinkly, bright green leaves. H 5ft (1.5m), S 3ft (1m). Clusters of cupped, single, glowing scarlet flowers, 2½in (6cm) across, are produced from summer–fall. H6

***R.* 'Korresia'.** See *R.* 'Friesia'.

***R.* Lady Emma Hamilton ('Ausbrother')** illus. p.183.

***R.* 'Lady Hillingdon'.** Tea rose with dark green leaves on twiggy, reddish-green stems. H and S 3ft (1m). Continuously bears tea-scented, elegant, pointed, double, rich apricot-yellow flowers, 4in (10cm) across. Best in full sun. Z5–9.

***R.* Lady Marmalade ('Hartiger').** Modern Floribunda rose with prickly stems and dark green leaves. H 3ft (1m), S 32in (80cm). Sweet-scented, double flowers, cupped at first then opening almost flat, 4in (10cm) across, are pale orange with hints of yellow, apricot, and pink, and borne continuously. Z5–9

***R.* Lady of Shalott ('Ausnyson').** Healthy "English" Shrub rose bearing cupped, fully double, fruit-scented, orange flowers, 4in (10cm) across, with yellow petal-backs, singly or in clusters. Repeats well. H 3ft (1m), S 2ft (60cm). Z5–9

***R.* 'La France'** illus. p.179.

***R.* L'Aimant ('Harzola').** Vigorous Floribunda rose with dark green foliage. H 3ft (1m), S 30in (75cm). Strongly fragrant, cupped, double, wavy, pale pink flowers with salmon-pink centers, 3½in (9cm) across, are borne from summer–fall. Good for bedding and cutting. Z6–9

***R.* La Sévillana ('Meigekanu').** Dense, bushy Floribunda rose with abundant, dark green leaves. H 4½ft (1.3m), S 5ft (1.5m). Clusters of faintly scented, cupped, double, brilliant, geranium-red flowers, 3in (8cm) across, are borne freely in summer. Will flower again in fall if deadheaded, or produce bright red hips if not. Z6–9

***R.* 'Lamarque'.** Vigorous Noisette with smooth stems and bright green leaves. H 15ft (5m), S 8ft (2.5m). From summer–fall, fragrant, flat, quartered rosette, fully double, cream-colored flowers, 3in (7cm) across, that fade to white, are borne on nodding stems. Z7–11

***R.* 'Landora'**, syn. *R.* 'Sunblest'. Vigorous Hybrid Tea with glossy, mid-green leaves. H 3ft (1m), S 2ft (60cm). From summer–fall, freely produces pointed buds that open to cupped, double yellow flowers, 4½in (11cm) across, that keep their color well. Z5–9

***R.* Laura Ford ('Chewarvel')** illus. p.187.

***R.* Lavender Dream ('Interlav')** illus. p.181.

***R.* 'Lavender Lassie'.** Vigorous, free-branching Hybrid Musk rose with semi-glossy, mid-green leaves. H 5ft (1.5m), S 4ft (1.2m). Produces clusters of cupped to flat, double, fragrant, pale lavender-pink flowers, 3in (7cm) across, continuously. Z6–10

***R.* 'Léda'.** Lax Damask with prickly stems and large green leaves. H and S 3ft (1m). In summer, produces rosette-shaped, fully double, fragrant, carmine-tipped white flowers, 3in (7cm) across, with button centers. Z5–9

***R.* Léonard de Vinci ('Meideauri').** Bushy, healthy Shrub rose with dark, glossy leaves. H and S 3ft (1m). Produces clusters of cupped, rosette-shaped, occasionally quartered, fully double, rich pink flowers, 3in (8cm) across, with dark pink reverses. Flowers almost continuously. Z6–10

***R.* 'Leverkusen'.** Vigorous, arching Climber with glossy, deep green leaves. H 10ft (3m), S 7ft (2.2m). Clusters of lightly scented, wide-opening, double, pale yellow flowers, 3in (8cm) across, loosely rosette-shaped with ruffled petals, are borne from summer–fall. Prune to maintain as a shrub. Z5–9

***R.* 'Lichtkönigin Lucia'.** Modern Climber with glossy, mid-green leaves. H 6ft (2m), S 5ft (1.5m). From summer–fall, bears clusters of sweet-scented, lightly cupped, rich chrome-yellow flowers, 3½in (9cm) across, with red tips and deep gold stamens. Z6–10

***R.* Lilli Marleen ('Korlima')** illus. p.181.

***R.* Lions-Rose ('Korvanaber')**, syn. *R.* 'Champagne Moment', illus. p.177.

***R.* Little Rambler ('Chewramb').** Climbing Miniature, repeat-flowering rose with small, dark green leaves. H 8ft (2.5m), S 7ft (2.2m). Produces tight clusters of strongly sweet-scented, rosette-shaped, double, blush-pink flowers, 1½in (4cm) across, fading to white, from summer–fall. Z6–9

***R.* 'Little White Pet'.** See *R.* 'White Pet'.

***R.* 'Louise Odier'.** Elegant, upright Bourbon rose with mid-green foliage. H 6ft (2m), S 4ft (1.2m). Produces very fragrant, rosette-shaped, fully double, rich pink flowers, 3in (7cm) across, from summer–fall. Good in dry climates. Z6–9

***R.* Love ('Jactwin').** Vigorous, healthy Hybrid Tea with dark leaves, large prickles, purplish stems and crimson new growths. H 5½ft (1.7m), S 4½ft (1.3m). High-centered, double, cherry-red flowers, 4½in (11cm) across, with contrasting white backs, and reflexed petals, are borne usually singly from summer–fall. Z5–9

***R.* Lovestruck ('Dicommatic').** A new Floribunda bush rose with dark green leaves. H 32in (80cm), S 3ft (1m). Lightly scented, double, high-centered flowers, 4in (10cm) across, are borne in clusters. Pale crimson with white centers and occasional streaks of white, the flowers are borne almost constantly. Z5–9

***R.* Loving Memory.** See *R.* Burgund '81 ('Korgund').

***R.* 'Madame Alfred Carrière'** illus. p.184.

***R.* 'Madame A. Meilland'**, syn. *R.* 'Peace', illus. p.182.

***R.* 'Madame Boll'**, syn. *R.* 'Comte de Chambord' of gardens, *R.* 'Madame Knorr'. Bushy, leafy, vigorous Portland rose with mid-green foliage. H 4ft (1.2m), S 3ft (1m). From summer–fall, bears cupped, fully double flowers, roughly quartered at the center, very sweetly fragrant, rich deep pink with paler pink edges, 4in (10cm) across. Z6–10

***R.* 'Madame Caroline Testout'.** Vigorous, branching Hybrid Tea with large prickles and large, mid-green leaves. H 3ft (1m), S 30in (75cm). Bears rounded, double, scented, silvery pink flowers, 4½in (11cm) across, with darker pink petal-backs, from summer–fall. Z6–9.

***R.* 'Madame Grégoire Staechelin'**, syn. *R.* 'Spanish Beauty', illus. p.185.

***R.* 'Madame Hardy'** illus. p.172.

***R.* 'Madame Isaac Pereire'** illus. p.174.

***R.* 'Madame Knorr'.** See *R.* 'Madame Boll'.

***R.* 'Madame Pierre Oger'.** Lax Bourbon rose, a sport of *R.* 'Reine Victoria'. H 6ft (2m), S 4ft (1.2m). Has light green leaves. In summer–fall, slender stems bear sweetly scented, cupped or bowl-shaped, double, pale pink flowers with rose-lilac tints, 3in (8cm) across. Grows well on a pillar. Z5–9

***R.* 'Madame Plantier'.** Vigorous, arching shrub, sometimes trained as a climber, with smooth stems and pale green leaves. H and S to 20ft (6m) on a support; H 6ft (2m), S 8ft (2.5m) grown as a shrub. In midsummer, bears large clusters of cupped, rosette-shaped, fully double, musk-scented white flowers, 3in (7cm) across. Z6–9

***R.* 'Maiden's Blush'**, syn. *R.* 'Great Maiden's Blush', illus. p.173.

***R.* 'Maigold'** illus. p.187.

***R.* Mainaufeuer ('Kortemma')**, syn. *R.* 'Chilterns', *R.* 'Red Ribbons'. Vigorous, spreading ground-cover rose with glossy, dark green foliage. H 30in (75cm), S 7ft (2.2m). Cupped to flat, semidouble, lightly scented, bright blood-red flowers, 2½in (6cm) across, are borne from summer–fall. Z4–10

***R.* Mainzer Fastnacht ('Tannacht').** syn. *R.* 'Blue Moon'. Vigorous Hybrid Tea. H 3ft (1m), S 28in (70cm). Bears high-centered, fully double, very fragrant, lilac-mauve flowers, 4in (10cm) across, from summer–fall. Z5–10

***R.* Manou Meilland ('Meitulimon').** Fast-growing, shapely Floribunda with healthy, glossy leaves. H 3ft (1m), S 32in (80cm). Bears clusters of cupped, double, rich pink flowers, 4in (10cm) across, with silver-pink reverses and ruffled petals. Repeats well. Z6–10

***R.* Many Happy Returns ('Harwanted')** illus. p.178.

***R.* 'Marchesa Boccella'**, syn. *R.* 'Jacques Cartier'. Upright, narrow, compact, hardy, Portland rose suitable for cold climates. H 5ft (1.5m), S 3ft (1m). Produces pale green leaves with long

narrow leaflets and strongly sweet-scented, deep rose-pink flowers, 3½in (9cm) across, with a neat button eye, singly or in clusters. Repeats from summer to late fall. Z4–9

***R.* 'Maréchal Niel'.** Vigorous, spreading Noisette or Climbing rose. H 15ft (5m), S 8ft (2.5m). Pendent stems bear large, pale green leaves and tea-scented, high-centered, double, buff-yellow flowers with hints of apricot and lemon, 4in (10cm) across, in late spring. Best under glass in cool climates. Z5–10

***R.* Margaret Merril ('Harkuly')** illus. p.177.

***R.* 'Marguerite Hilling'**, syn. *R.* 'Pink Nevada', illus. p.173.

***R.* Mariandel ('orpeahn')**, syn. *R.* The Times Rose, illus. p.180.

***R.* 'Marie Pavié'.** Vigorous, compact, smooth-stemmed Polyantha with bright green leaves. H 2ft (60cm), S 30in (75cm). Spacious clusters of rosette-shaped, semidouble, musk-scented, pure white flowers (from pale pink buds), 2in (5cm) across, are borne from summer–fall. Z4–10

***R.* 'Martin Frobisher'.** Upright, super-hardy, vigorous, smooth-stemmed Rugosa rose with gray-green leaves and long slender stems. H 5½ft (1.7m), S 3ft (1m). Clusters of imbricated (often with a button eye), scented, milky-pink flowers, 2½in (6cm) across, with white petal-backs, are borne from summer–fall. Z2–9

***R.* Mary Rose ('Ausmary').** Shrub rose with an open, loose habit and mid-green leaves. H 4ft (1.2m), S 3ft (1m). Produces myrrh-scented, cupped, fully double, rose-pink flowers, 3½in (9cm) across, over a long period from summer–fall. Z6–9

***R.* 'Mermaid'** illus. p.187.

***R.* 'Mister Lincoln'.** Hybrid Tea of upright habit with dark red young foliage. H 3½ft (1.1m), S 2ft (60cm). Bears high-centered to cupped, fully double, fragrant, dark velvety red flowers, 5½in (14cm) across, from summer–fall. Z5–9

***R.* Molineux ('Ausmol').** Upright, bushy "English" Shrub rose with shiny, dark green foliage. H and S 3ft (1m). Clusters of fruit-scented, cupped to flat, double, golden-yellow flowers, 3in (8cm) across, fading to cream at the edges, are borne in summer and again in fall. Z6–9

***R.* Moment in Time ('Korcastrav').** Short, sturdy, healthy Floribunda rose. H 2ft (60cm), S 16in (40cm). Bears clusters of cupped, later flat, semidouble, bright red flowers, 2½in (6cm) across. Repeat-flowering. Z5–9

***R.* 'Moonlight'.** Hybrid Musk of open habit with reddish green stems and leaves. H and S 5½ft (1.7m). Spacious clusters of semidouble, lightly cupped, scented, creamy white flowers, 1¾in (4.5cm) across, are borne from summer–fall. Z6–10

***R.* Mountbatten ('Harmantelle')** illus. p.182.

***R.* 'Mousseline'**, syn. *R.* 'Alfred de Dalmas' of gardens. Bushy Moss rose with twiggy growth and matte green leaves. H and S 3ft (1m). Mainly in summer, bears scented, cupped, fully double, blush-pink flowers, 3in (8cm) across, with light mossing. Z6–9

***R. moyesii*.** Vigorous, arching Species rose with impressive prickles and long, dark green leaves, comprising many leaflets. H 12ft (4m), S 10ft (3m). In summer, lightly scented, flat, single, pink, blood-red, or crimson flowers, 2in (5cm) across, with pale yellow stamens, are borne on short stems. Produces large and long, flagon-shaped, red hips in fall. Z6–9.

'Geranium' (syn. *R.* 'Geranium'; illus. p.176), H 10ft (3m), S 8ft (2.5m), has bright geranium-red flowers followed by large and long, red hips.

***R.* 'Mozart'.** Healthy, vigorous, bushy Hybrid Musk with large, pale green leaves. H 5ft (1.5m), S 6ft (2m). Clusters of 20–50 single, sweet- and musk-scented, pink flowers, 1¼in (3cm) across, with white centers and prominent yellow stamens, are borne continuously, followed by small orange hips. Z5–10

***R.* 'Mrs. John Laing'** illus. p.174.

***R.* 'Mrs. Oakley Fisher'.** Hybrid Tea with bronze-green foliage, crimson when young. H and S 3ft (1m). Repeatedly bears cupped to flat, single, scented apricot flowers with crimson filaments, 3in (7cm) across, fading to pale buff with age. Z7–11

***R. mundi*.** See *R. gallica* 'Versicolor'.

***R.* Munstead Wood ('Ausbernard').** Sturdy "English" Shrub rose with mid-green leaves, red-bronze when young. H 32in (80cm), S 2ft (60cm). Bears cupped, fully double, richly scented, deep crimson flowers, 4in (10cm) across, usually solitary and sometimes in clusters. Repeat-flowering. Z5–10

***R.* 'Mutabilis'** illus. p.174.

***R.* 'Nevada'** illus. p.173.

***R.* 'New Dawn'** illus. p.185.

***R.* 'Noisette Carnée'**, syn. *R.* 'Blush Noisette'. Very free-flowering, Noisette rose of branching habit with matte green foliage. H 8ft (2.5m), S 5ft (1.5m). Smooth stems bear clusters of strongly scented, cupped, double, lilac-pink flowers fading almost to white, 2in (5cm) across, from summer–fall. May be grown as a shrub. Z3–8

***R.* Nostalgie ('Taneiglat')** illus. p.179.

***R.* 'Nozomi'.** Creeping, groundcover rose with small, dark green leaves. H 1½ft (45cm), S 4ft (1.2m). Bears slightly scented, flat, single, pale pink-white flowers, 1in (2.5cm) across, close to stems in a single flush in summer. May be trained up a pillar. Z5–9

***R.* 'Nuits de Young'.** Erect Moss rose with bristly, wiry stems and small, dark green leaves. H 4ft (1.2m), S 3ft (1m). In summer, bears slightly scented, double, flat, dark crimson-purple flowers, 1½in (4cm) across, with occasional white flecks and with golden-yellow stamens. Z3–8

***R.* x *odorata* 'Pallida'**, syn. *R.* 'Old Blush China', *R.* 'Parson's Pink', *R.* 'Parson's Pink China', illus. p.174. **'Pseudindica'** (syn. *R.* 'Fortune's Double Yellow') is a lax Climber of restrained growth, with glossy, light green leaves. H 8ft (2.5m), S 5ft (1.5m). In summer, bears small clusters of scented, pointed to cupped, semidouble, copper-suffused, yellow flowers, 2in (5cm) across. Prune very lightly. Needs a hot summer to ripen the wood. Z4–9

***R. officinalis*.** See *R. gallica* var. *officinalis*.

***R.* 'Oklahoma'.** Outsize Hybrid Tea with large, mid-green leaves. H 6ft (2m), S 4½ft (1.3m). High-centered, later cupped, double, sweet-scented, velvety dark crimson flowers, 5in (13cm) across, are usually borne singly on long, stiff stems. Repeats well. Z4–10

***R.* 'Old Blush China'.** See *R.* x *odorata* 'Pallida'.

***R.* Olivia Rose Austin ('Ausmixture')** illus. p.174.

***R. omeiensis* f. *pteracantha*.** See *R. sericea* subsp. *omeiensis* f. *pteracantha*.

***R.* 'Ophelia'.** Upright, open Hybrid Tea rose with dark green leaves. H 3ft (1m), S 2ft (60cm). In summer–fall, produces highly fragrant, urn-shaped, double, creamy pale pink flowers, 4in (10cm) across, singly or in clusters. Z6–9

***R.* Oranges 'n' Lemons ('Macoranlem')** illus. p.183.

***R.* Papa Meilland ('Meisar').** Hybrid Tea with prickly stems. H 3ft (1m), S 2ft (60cm). High-centered, fully double, very fragrant, dark velvet-crimson flowers, 5in (12cm) across, are borne on long stems from summer–fall. Z7–11

***R.* 'Parson's Pink.** See *R.* x *odorata* 'Pallida'.

***R.* 'Parson's Pink China'.** See *R.* x *odorata* 'Pallida'.

***R.* Pascali ('Lenip').** Upright Hybrid Tea rose with deep green leaves. H 4ft (1.2m), S 32in (80cm). Neat, urn-shaped ivory buds open to fully double, pure white flowers, 5in (12cm) across, with a light, sweet scent, from summer–fall. Z6–9

***R.* Pat Austin ('Ausmum').** Bushy Shrub rose with matte, mid-green leaves. H 4ft (1.2m), S 3ft (1m). In summer–fall, produces strongly fruit-scented, cupped, fully double, rich orange flowers with some red veining on petals, 5in (12cm) across, that fade to peach. Z6–9

***R.* 'Paul Neyron'.** Vigorous, upright Hybrid Perpetual with olive-green leaves. H 5ft (1.5m), S 4ft (1.2m). Cupped, later rosette-shaped, fully double, lightly scented flowers, to 6in (15cm) across, with ruffled, lilac-tinged, deep pink petals with silvery backs, are borne repeatedly. Z4–9

***R.* 'Paul's Himalayan Musk'.** Very vigorous Rambler with prickly, trailing shoots and drooping leaves. H and S 30ft (10m). Large clusters of musk-scented, rosette, double, lilac-pink flowers, 1¼in (3cm) across, are freely borne in late summer. Suitable for growing up a large tree or in a wild garden. Z6–9

***R.* 'Paul's Lemon Pillar'** illus. p.184.

***R.* 'Paul's Scarlet Climber'.** Vigorous Climber with dense, semi-glossy, mid-green foliage. H and S 10ft (3m). Clusters of cupped, double, bright red flowers, 3in (8cm) across, are borne freely in early summer, a few later in the season. Z5–9

***R.* 'Peace'.** See *R.* 'Madame A. Meilland'.

***R.* 'Peaudouce'.** See *R.* Elina ('Dicjana').

***R.* 'Penelope'** illus. p.172.

***R.* Penny Lane ('Hardwell')** illus. p.186.

***R.* 'Perle d'Or'.** China rose that forms a twiggy, leafy, small shrub with healthy, small, dark green leaves. H 4ft (1.2m), S 3ft (1m). Small, slightly scented, urn-shaped, fully double, apricot-pink flowers, 1½in (4cm) across, fading to mother-of-pearl from the outside, with darker petal-backs, are borne from summer–fall. Z6–9

***R.* 'Persian Yellow'.** See *R. foetida* 'Persiana'.

***R.* 'Phyllis Bide'.** Bushy Climber that can be pruned as a shrub, with small, glossy, mid-green leaves. H 8ft (2.5m), S 5ft (1.5m). Bears clusters of flat, rosette-shaped, double flowers, 2in (5cm) across, pale yellow with apricot petal-backs, fading quickly to white, from summer–fall. Z6–9

***R.* Pierre de Ronsard ('Meiviolin')**, syn. *R.* 'Eden Rose '88'. Stiffly branching Climber with tough, shiny, dark green leaves. H 8ft (2.5m), S 6ft (1.8m). Bears rounded, fully double, lightly scented, pendulous, pale pink flowers often with darker centers, 4½in (11cm) across, from summer–fall. Best in hot, dry climates. Z5–10

***R. pimpinellifolia*.** See *R. spinosissima*.

***R.* Pink Flower Carpet.** See *R.* Heidetraum ('Noatraum').

***R.* 'Pink Grootendorst'.** Upright, bushy, very prickly Shrub rose with rough, pale green leaves. H 6ft (2m), S 5ft (1.5m). Sprays of scentless, double flowers, 2in (5cm) across, have clear pink petals with crimped edges, and are borne in summer and again in fall. Z6–9

***R.* 'Pink Nevada'.** See *R.* 'Marguerite Hilling'.

***R.* Pink Perfection.** See *R.* Beverly ('Korpauvio').

***R.* 'Pink Perpétué'** illus. p.179.

***R.* 'Pompon de Paris'**, syn. *R. chinensis* var. *minima*, *R.* 'Rouletii'. Compact Miniature rose with many small, neat, mid-green leaves on zig-zag stems. H and S 8in (20cm). Freely produces cupped, double, deep pink flowers, ¾in (2cm) across, from summer–fall. Z6–9

***R.* 'Président de Sèze'**, syn. *R.* 'Jenny Duval'. Vigorous, rather open Gallica rose with pale green leaves. H and S 4ft (1.2m). Bears fragrant, quartered-rosette, fully double, cherry-crimson flowers fading to lilac, mauve, and gray, 4in (10cm) across, in summer. Z6–9

R. primula (Incense rose). Erect to arching Species rose with aromatic, incense-scented leaves. H 10ft (3m), S 6ft (2m). Produces scented, cupped, single, pale primrose-yellow flowers, 1¼in (3cm) across, in late spring. May die back a little in hard winters. Z4–9

***R.* Princess Alexandra of Kent ('Ausmerchant').** Bushy, leafy, healthy "English" Shrub rose. H 3ft (1m), S 32in (80cm). Large, fully double flowers, 4½in (11cm) across, are rounded at first, opening to a rough rosette of mid-pink outer petals, with raspberry-pink petals around the center. Flowers are borne on upright stems, singly or in clusters from summer–fall. Z4–11

***R.* Princess Anne ('Auskitchen')** illus. p.180.

***R.* Princess of Wales ('Hardinkum').** Delicate, compact Floribunda rose with dark green leaves. H 30in (75cm), S 2ft (60cm). Bears tight clusters of scented, cupped, fully double, pure white blooms, 3in (7cm) across, from summer–fall. Z6–9

***R.* Princesse de Monaco ('Meimagarmic').** Healthy, upright Hybrid Tea with glossy, dark green leaves. H 3ft (1m), S 32in (80cm). Lightly fruit-scented flowers, 5in (13cm) across, with creamy white petals with a pink edge, are borne singly on fairly long stems, and are repeat-flowering. Z5–9

***R.* 'Prosperity'.** Dense, arching Hybrid Musk with many dark green leaves. H 5ft (1.5m), S 4ft (1.2m). Continuously produces large clusters of rosette-shaped, double, scented, creamy white flowers, 2in (5cm)

across, flushed pale pink with golden stamens. Z6–10
***R.* Purple Eden.** See *R.* Ebb Tide ('Weksmopur').
***R.* 'Queen Elizabeth'.** See *R.* 'The Queen Elizabeth Rose'.
***R.* 'Queen of Denmark'.** See *R.* 'Königin von Dänemark'.
***R.* 'Queen of Hearts'.** See *R.* 'Dame du Coeur'.
***R.* Queen of Sweden ('Austiger').** Upright, healthy "English" Shrub rose with dark green leaves. H 3ft (1m), S 32in (80cm). Bears myrrh-scented, cup-shaped flowers, 3½in (9cm) across, with circles of petals, peachy-pink, fading to rose-pink, that open out into a quartered rosette. Flowers are borne in clusters, sometimes singly, almost continuously. Z5–11
***R.* Rachel.** See *R.* Augusta Luise ('Tangust').
***R.* 'Rambling Rector'** illus. p.184.
***R.* 'Raubritter'** illus. p.186.
***R.* 'Red Ribbons'.** See *R.* Mainaufeuer.
***R.* 'Reine des Violettes'.** Arching, vigorous Hybrid Perpetual rose with smooth stems and mid-green leaves. H 5ft (1.5m), S 4ft (1.2m). Fragrant, quartered-rosette, fully double, violet-purple flowers, 4in (10cm) across, fading to lilac-mauve, are borne from summer–fall. May be grown on a support. Z6–9
***R.* 'Reine Victoria'** illus. p.173.
***R.* Remember Me ('Cocdestin')** illus. p.183.
***R.* 'Rêve d'Or'** illus. p.182.
***R.* Rhapsody in Blue ('Frantasia')** illus. p.175.
***R.* Roald Dahl ('Ausowlish').** Vigorous "English" Shrub rose, forming a leafy shrub with only a few prickles. H 4½ft (1.4m), S 3ft (1m). Bears pale orange or peach-colored flowers from red buds (paler toward the outside), cupped, then opening to roughly quartered rosettes, 3in (8cm) across**,** with a fruity, spicy scent. Flowers are borne abundantly and repeatedly in clusters. Z5–11
***R.* 'Robin Hood'.** Healthy, vigorous Hybrid Musk rose with wrinkly, mid-green leaves, slender leaflets, and prickly stems. H 5ft (1.5m), S 4ft (1.2m). Bears clusters of 15–100 lightly cupped, semidouble, bright cherry-red flowers, 1¼in (3cm) across, with white centers and golden stamens. Repeats well. Z6–9
***R.* 'Robusta'.** See. *R.* Kordes Robusta ('Korgosa').
***R.* 'Rose de Rescht'.** Neat, compact Portland rose with densely leafy stems bearing mid-green leaves. H 3ft (1m),S 30in (75cm). Produces tight clusters of rosette-shaped, fully double, sweet-scented, pale crimson flowers, often with a button eye, 2½in (6cm) across, on short stems. Repeat-flowering. Z4–9
***R.* Rose Gaujard ('Gaumo').** Upright, strong Hybrid Tea rose with plentiful glossy foliage. H 3ft (1m), S 30in (75cm). Bears slightly scented, urn-shaped, double, cherry-pink flowers, 4in (10cm) across, with white petal-backs, freely from summer–fall. H6
***R.* 'Roseraie de l'Haÿ'** illus. p.175.
***R.* 'Rouletii'.** See *R.* 'Pompon de Paris'.
R. roxburghii (Burr rose, Chestnut rose, Chinquapin rose; illus. p.176). Compact, bushy Species rose with flaky bark and narrow, light to mid-green leaves, often with up to 7–11 leaflets. H and S 6ft (2m). Produces solitary, rosette-shaped, double, lilac-pink flowers, 3in (8cm) across, from summer to late fall, followed by very prickly hips, which remain green until they fall off in late summer. Z5–9
***R.* Royal William.** See *R.* Duftzauber '84 ('Korzaun').
R. rubiginosa, syn. *R. eglanteria* (Eglantine, Sweet briar; illus. p.176). Vigorous, arching, Species rose with large prickles and apple-scented foliage. H and S 8ft (2.5m). Bears cupped, single, rose-pink flowers, 1in (2.5cm) across, in a single flush in summer, followed by red hips in fall. Z3–8
***R. rubrifolia*.** See *R. glauca*.
R. rugosa (illus. p.176). Vigorous, dense Species rose with prickly stems and wrinkled leaves. H and S 3–8ft (1–2.5m). Bears cupped, single, magenta-pink flowers, 3in (8cm) across, from summer–fall, followed by large, red hips. Z3–9. **'Alba'** is a white sport.
***R.* 'Sally Holmes'** illus. p.173.
***R.* 'Sander's White Rambler'.** Vigorous Rambler of lax growth with plentiful, small, glossy leaves. H 10ft (3m), S 8ft (2.5m). Fragrant, cup-shaped, semidouble, white flowers, 1¼in (3cm) across, are borne in clusters in late summer.
***R.* 'Sarah van Fleet'.** Vigorous, erect to arching Rugosa rose with wrinkled, pale green leaves. H 8ft (2.5m), S 5ft (1.5m). Very fragrant, cupped, semidouble, clear light pink, sometimes mauve-pink flowers, 3in (8cm) across, showing yellow stamens, are borne from summer–fall. Z4–11
***R.* Scent From Heaven ('Chewbabaluv').** Vigorous, handsome, large-flowered Climber with a fair number of prickles and dark green leaves. H 12ft (4m), S 6ft (2m). Produces sweet-scented, orange, medium-double flowers that fade to salmon-pink, 4in (10cm) across, with a yellow patch around the stamens. Blooms are borne in clusters like a Floribunda, in flushes from summer–fall. Z6–9
***R.* Scentimental ('Wekplapep').** Shapely, healthy Floribunda with slightly ridged leaves. H 4½ft (1.3m), S 3ft (1m). Produces clusters of very cupped, double and fully double, strongly scented flowers, 5in (12cm) across, irregularly striped crimson-and-white. Repeats well. Z4–9
***R.* Scepter'd Isle ('Ausland').** Vigorous, upright "English" Shrub rose with dark green foliage. H 5ft (1.5m), S 4½ft (1.3m). In summer and again in fall, produces clusters of myrrh-scented, cupped, fully double, rose-pink flowers, 4½in (11cm) across, eventually opening to show yellow stamens. Z6–9
***R.* Schneewittchen ('Korbin')**, syn. *R.* 'Iceberg', illus. p.177.
***R.* 'Schoolgirl'** illus. p.187.
***R.* 'Sea Foam'** illus. p.178.
***R.* 'Seagull'** illus. p.177.
R. sericea* subsp. *omeiensis* f. *pteracantha, syn. *R. omeiensis* f. *pteracantha* (illus. p.176). Stiff, upright, vigorous Species rose with small, light green leaves and large, red prickles on new growth. H 8ft (2.5m), S 7ft (2.2m). In summer, solitary, flat, white flowers, 1–2½in (2.5–6cm) across, with only 4 petals, are borne briefly along the stems. Z5–9
***R.* Sexy Rexy ('Macrexy').** Compact, bushy Floribunda rose with dark green leaves. H 28in (70cm), S 2ft (60cm). Bears clusters of slightly scented, flat, showy, camellialike, fully double, creamy pink flowers, 3in (8cm) across, with imbricated petals, in summer and again in fall. Z5–9
***R.* Sheila's Perfume ('Harsherry').** Upright Floribunda rose with glossy, reddish foliage. H 30in (75cm), S 2ft (60cm). Fragrant, urn-shaped, double, buff-yellow flowers, 3½in (9cm) across, edged with red, fading to pink and white, are borne singly or in clusters from summer–fall. Z5–9
***R.* Shocking Blue ('Korblue').** Vigorous Floribunda rose with dark green foliage. H 30in (75cm), S 2ft (60cm). In summer–fall, bears fragrant, pointed, well-formed, fully double, lilac-purple flowers with crimson edges, 4in (10cm) across, singly or in clusters. Z5–9
***R.* 'Silver Anniversary'.** See *R.* aren Blixen ('Poulari').
***R.* 'Silver Jubilee'.** Dense, upright Hybrid Tea rose with abundant, glossy foliage. H 3½ft (1.1m), S 2ft (60cm). Bears slightly scented, high-centered, fully double, rose-pink flowers, 5in (12cm) across, flushed with peach and red, very freely in summer and again in fall. Z6–9
***R.* 'Sombreuil'.** Vigorous, free-branching, climbing Tea rose with dark green leaves. H 10ft (3m), S 6ft (1.8m). Flat, quartered-rosette, double, strongly fragrant, creamy white flowers, 3½in (9cm) across, are borne continuously. Best in dry, warm weather. Z6–11
***R.* Sommerwind ('Korlanum')**, syn. *R.* 'Surrey'. Vigorous, mound-forming groundcover rose with abundant dark green foliage. H 32in (80cm), S 4ft (1.2m). Clusters of cupped, semidouble, pale pink flowers, fading to pale pink, 2½in (6cm) across, are borne continuously and profusely along the stems. Z4–10
***R.* 'Sophie's Perpetual'.** Healthy China rose with dark green leaves. H 5ft (1.5m), S 4½ft (1.3m). Bears short-stemmed clusters of high-centered (later cupped), double, tea-scented flowers, 3in (7cm) across, mauve-pink at first, darkening to crimson from the outside, and contrasting with the paler inner petals. Constantly in flower. Prune lightly. Z7–10
***R.* Sophy's Rose ('Auslot').** Neat, bushy, healthy "English" Shrub rose producing mid-green leaves with slender leaflets. H 3ft (1m), S 32in (80cm). Produces rosette-shaped, fully double, musk and tea-scented, pale crimson flowers, sometimes with a button eye, 4in (10cm) across. Repeats well. Z5–9
***R.* 'Souvenir de la Malmaison'.** Slow-growing Bourbon rose with large, dark green leaves. H and S 5ft (1.5m). Sweet-scented, quartered-rosette, fully double flowers, 5in (12cm) across, are pale pink fading to white, and borne from summer–fall. Rain spoils flowers. Best in a hot, dry climate. Z6–9
***R.* 'Souvenir du Docteur Jamain'.** Arching Hybrid Perpetual with dark green leaves. H 10ft (3m), S 8ft (2.5m). Bears cupped, double, strongly fragrant, velvet-textured deep red flowers, 3½in (9cm) across, from summer–fall. Z4–10
***R.* 'Spanish Beauty'.** See *R.* 'Madame Grégoire Staechelin'.
***R.* Special Anniversary ('Whastiluc').** Vigorous, upright, Hybrid Tea with glossy, dark green leaves. H 32in (80cm), S 2ft (60cm). Dark pink flowers open out to reveal a pretty muddle of petals reminiscent of an "English" rose. They are borne singly or, especially in fall, in clusters. Z5–11
***R.* 'Spectacular'.** See *R.* 'Danse du Feu'.
R. spinosissima, syn. *R. pimpinellifolia* (Burnet rose, Scotch rose). Dense, spreading Species rose with masses of prickles and small, dark green leaves. H 3ft (1m), S 4ft (1.2m). Bears a single flush of lightly cupped, creamy-white flowers, 1½in (4cm) across, usually in late spring, followed by black hips. Z3-9. **'Plena'** bears cupped, double, creamy-white flowers, with a lily-of-the-valley scent.
***R.* 'Stanwell Perpetual'.** Scots rose of arching, twiggy habit, with prickly stems and fernlike, dark grayish green leaves. H 3ft (1m), S 4ft (1.2m). Loosely formed, cupped, fully double, sweetly scented, shell-pink flowers, 3in (8cm) across, fading to white, are borne singly on short stems from summer–fall. Z3–9
***R.* Strawberry Hill ('Ausrimini')** illus. p.174.
***R.* Summer Song ('Austango')** illus. p.177.
***R.* Summer Wine ('Korizont')** illus. p.187.
***R.* 'Sunblest'.** See *R.* 'Landora'.
***R.* Sunny Sky ('Koraruli').** Hybrid Tea rose with large, dark leaves. H 3ft (1m), S 32in (80cm). Bears mid-yellow flowers that fade to cream as they open, 4in (10cm) across**,** with a fresh, fruity scent, singly or in clusters almost continuously. Z6–10
***R.* 'Surrey'.** See *R.* Sommerwind ('Korlanum').
***R.* Sweet Dream ('Fryminicot')** illus. p.179.
***R.* Sylvia ('Korlift')**, syn. *R.* Congratulations. Tall, vigorous Hybrid Tea with large, semi-glossy, mid-green leaves. H 5ft (1.5m), S 3ft (1m). Continuously bears neatly formed, urn-shaped, fully double, sweet-scented, rose-pink flowers, 4½in (11cm) across, on long stems. Z5–9
***R.* 'Sympathie'** illus. p.186.
***R.* Teasing Georgia ('Ausbaker')** illus. p.176.
***R.* Tess of the D'Urbervilles ('Ausmove').** Slightly lax, arching, prickly Shrub rose with mid-green leaves. H 6ft (1.8m), S 5ft (1.5m). In summer–fall, repeatedly bears scented, quartered-rosette, crimson flowers, 5in (12cm) across, that may fade a little with sun and age. Z4–11
***R.* 'The Fairy'** illus. p.178.
***R.* 'The New Dawn'.** See *R.* 'New Dawn'.
***R.* The Pilgrim ('Auswalker')** illus. p.176.
***R.* The Poet's Wife ('Auswhisper').** Vigorous "English" Shrub rose with dark green leaves. H 4ft (1.2m), S 3ft (90cm). Large, cupped, yellow flowers open to a rosette, 4in (10cm) across, with a strong, sweet, citrussy scent; outer petals are pale yellow or cream. Flowers are borne on erect, long stems singly or in clusters, in flushes from summer–fall. Z4–11
***R.* 'The Queen Elizabeth Rose'**, syn *R.* 'Queen Elizabeth', illus. p.178.
***R.* The Times Rose.** See *R.* Mariandel ('Korpeahn').
***R.* 'Thérèse Bugnet'** illus. p.180.
***R.* 'Tiffany'.** Vigorous Hybrid Tea bush

rose with long, strong stems and dark green leaves. H 5ft (1.5m), S 3ft (1m). Strongly fragrant, pink flowers, 4¼in (11cm) across, have a yellow flush at the center when fully open and are borne singly or in small clusters from summer–fall. Z4–10

***R.* 'Tour de Malakoff'.** Shrub rose of lax, open habit with large prickles and small, smooth leaves. H 6ft (2m), S 5ft (1.5m). In a single flush in summer, produces scented, cupped, double, purplish-magenta flowers, 5in (12cm) across, fading to grayish violet-lilac. Z5–9

***R.* Tranquillity ('Ausnoble')** illus. p.173.

***R.* 'Tricolore de Flandre'.** Vigorous, upright Gallica rose with dark green leaves. H and S 3ft (1m). Very fragrant, cupped to flat, double, pale-pink flowers, 4in (10cm) across, striped with crimson and fading to white and purple, open in summer. Z5–9

***R.* Troika ('Poumidor').** Vigorous, dense Hybrid Tea rose with abundant, large, semi-glossy, dark green leaves. H 3ft (1m), S 30in (75cm). Fragrant, high-centered, double, pale orange flowers with a red edge, 5in (13cm) across, fading to dark pink, are produced continuously. Z6–9

***R.* Trumpeter ('Mactru').** Neat, bushy Floribunda rose with semi-glossy, deep green leaves. H 2ft (60cm), S 20in (50cm). Produces many cupped, fully double, vivid scarlet flowers, 2½in (6cm) across, during summer–fall. Z6–9

***R.* 'Tuscany Superb'.** Vigorous, upright Gallica rose with dull, mid-green leaves. H and S 3ft (1m). In summer, bears slightly scented, cupped to flat, double, deep crimson-to-purple flowers, 3in (7cm) across, with gold stamens. Z3–8

***R.* 'Ulrich Brunner Fils'.** Strong, slender, upright Hybrid Perpetual with large, shiny, mid-green leaves and a few prickles. H 5½ft (1.7m), S 4½ft (1.3m). Produces globular, very double, sweet-scented, bright cherry-pink flowers with paler petal-backs, 5in (12cm) across, singly or in clusters. Repeat flowering. Z5–9

***R.* 'Variegata di Bologna'.** Willowy, arching Bourbon rose with large, pale green leaves. H 7ft (2.2m), S 5ft (1.5m). In summer–fall, produces fragrant, quartered-rosette, fully double flowers, 3in (8cm) across, pale pink but flecked and striped with purple-crimson. Can be grown as a climber in hot climates. Z4–9

***R.* 'Veilchenblau'** illus. p.185.

***R.* Warm Welcome ('Chewizz')** illus. p.183.

***R.* Warm Wishes ('Fryxotic')** illus. p.179.

***R.* 'Wedding Day'.** Rampant Rambler. H 25ft (8m), S 12ft (4m). Produces large clusters of fruity-scented, flat, single, creamy-white flowers, 1in (2.5cm) across, that mature to pale pink, in late summer, followed by small, scarlet hips. Suitable for growing up a large tree or in a wild garden. Z6–9

***R.* Westerland ('Korwest').** Vigorous, continuous-flowering Shrub rose with long, dark green leaves. H 6ft (2m), S 4ft (1.2m) as a shrub; can be trained to H 10ft (3m) as a climber. Produces big, bold clusters of loosely formed, cupped, double, scented, apricot-orange flowers, 4½in (11cm) across, with yellow petal bases. Z4–9

***R.* Whisky ('Tanky')**, syn. *R.*Whisky Mac. Low, spreading, Hybrid Tea rose with dark green leaves, bright bronze-crimson when young. H 30in (75cm), S 2ft (60cm). Fragrant, rounded, fully double, amber-yellow flowers, 4in (10cm) across, are borne freely from summer–fall. Best in cool weather. Prune lightly. Z6–9

***R.* Whisky Mac.** See *R.* Whisky ('Tanky').

***R.* 'White Pet'**, syn. *R.* 'Little White Pet'. Dwarf, bushy, repeat-flowering sport of *R.* 'Félicité Perpétue'. H 1½ft (45cm), S 22in (55cm). Produces clusters of rosette-shaped, fully double, blush-pink, fading to white flowers, 1½in (4cm) across with a strong musky scent. Semievergreen leaves are dark green. Z5–10

***R.* 'William Lobb'** illus. p.175.

***R.* William Morris ('Auswill').** Shrub rose of lax growth with a few large prickles and glossy, dark green foliage. H 5½ft (1.7m), S 4ft (1.2m). Fruit-scented, rosette-shaped, pale apricot flowers, fading to pale pink, 3in (8cm) across, are borne in clusters. Repeats well. Z5–11

***R.* William Shakespeare 2000 ('Ausromeo').** Bushy Shrub rose with mid-green leaves. H 5ft (1.5m), S 3ft (1m). Bears strongly scented, quartered-rosette, fully double, crimson flowers, 4in (10cm) across, in summer and again in fall. Z5–9

***R.* Winchester Cathedral.** Shrub rose of open habit, a white-flowered sport of *R.* Mary Rose. H 4ft (1.2m), S 3ft (1m). Has mid-green leaves and myrrh-scented, cupped, fully double, white flowers, 3½in (9cm) across, from summer–fall; sometimes reverts attractively to pink. Z5–11

***R.* Wisley 2008 ('Ausbreeze').** Bushy Shrub rose with dull, mid-green leaves. H 4ft (1.2m), S 3ft (1m). Quartered-rosette, fully double, light rose-pink flowers, with a lighty, fruity scent, open from plump, rounded buds in summer and again in fall. Z5–9

***R. xanthina* 'Canary Bird'**, syn. *R.* 'Canary Bird'. Vigorous, dense, arching Species hybrid with small, bright green leaves. H and S 7ft (2.2m). In late spring, bears a single flush of fruit-scented, cupped, single, yellow flowers, 2in (5cm) across. Z5–9

***R.* 'Yesterday'.** Bushy, arching Polyantha rose with neat, small, glossy, mid-green leaves. H and S 3–5ft (1–1.5m). Fragrant, rosette, semidouble, lilac-pink to rose-violet flowers, 1in (2.5cm) across, are borne, mainly in clusters, from summer through to early winter. Z5–9

***R.* 'Yolande d'Aragon'.** Sturdy Portland rose of upright growth habit with small, smooth, pale green leaves. H 4ft (1.25m), S 3ft (1m). Strongly fragrant, lightly cupped, deep pink flowers with a hint of magenta at the center, 4in (10cm) across, repeat regularly from summer–fall. Z4–10

***R.* You're Beautiful ('Fryracy').** Compact Floribunda rose with dark green leaves. H 32in (80cm), S 2ft (60cm). Freely bears an abundance of lightly scented, double, rose-pink flowers, 3in (8cm) across, with a rich pink center, in clusters in summer–fall. Z6–9

***R.* 'Yvonne Rabier'.** Dense, bushy Polyantha rose with dark green leaves. H and S 2ft (60cm). Bears large clusters of moderately scented, rounded, fully double, white flowers, 3cm (1¼in) across, continuously in summer–fall. Z5–9

***R.* 'Zéphirine Drouhin'** illus. p.185.

***R.* 'Zigeunerknabe'**, syn. *R.* 'Gipsy Boy'. Vigorous, prickly Shrub rose of lanky habit with dark green leaves. H 6ft (2m), S 4ft (1.2m). Scented, cupped to flat, double, dark sometimes mid-crimson flowers, 2½in (6cm) across, are borne in summer. Z3–8

ROSCOEA

ZINGIBERACEAE

Genus of late summer- and early fall-flowering, tuberous perennials, related to ginger, grown for their orchidlike flowers. All species have a hooded, upper petal, a wide-lobed, lower lip and 2 narrower petals. Suits open borders, rock gardens and woodland gardens. Fully to frost hardy. Needs sun or partial shade and cool, well-drained, humus-rich soil that must be kept moist in summer. Top-dress with leaf mold or well-rotted compost in winter. Propagate by division in spring or by seed, exposed to frost for best germination, in fall or winter.

***R. alpina*.** Herbaceous, creeping, tuberous perennial. H and S 8in (20cm). Bears 1–5 deep purple, pink, or white flowers in succession in summer, at the top of leafy shoots. Produces 1–2 rather short, lance-shaped, mid-green leaves at flowering time, increasing to 5–6 leaves, to 10in (25cm) long. Requires a shady site. Z6–8

R. auriculata illus. p.411.

***R. australis*.** Summer-flowering, tuberous perennial. H 10–16in (25–40cm) , S 10in (25cm). The 2–7 broadly lance-shaped, glossy, dark green leaves, arranged in opposite pairs, form a pseudostem bearing 1–2 purple or white flowers, with shallowly lobed lips to 1in (2.5cm) across. Intolerant of winter wet, so best in a cold frame. Sometimes confused with *R. tibetica*. Z6–8

R. cautleyoides illus. p.424.

R. humeana illus. p.423.

***R. procera*.** See *R. purpurea*.

R. purpurea, syn. *R. procera*. Summer-flowering, tuberous perennial. H 10–16in (24–40cm), S 6in (15cm). Lance-shaped, erect leaves are long-pointed and wrap around each other at base to form a false stem. Bears long-tubed, purple flowers. Z6–8

R. scillifolia (illus. p.477). Upright, tuberous perennial. H 14in (35cm), S 3in (8cm). Small, purple-black or light pink flowers are produced in summer–fall above narrowly lance-shaped to linear, mid-green leaves. Z6–8

***R. tibetica*.** Rosette-forming, tuberous perennial. H to 7in (18cm), S 8in (20cm). Broadly lance-shaped, pleated, mid-green leaves. In summer, produces purple, pink or white flowers, with deeply lobed lips to ⅝–¾in (1.5–2cm) across, at the top of the stem. Z5–8

ROSMARINUS

LAMIACEAE/LABIATAE

Genus of evergreen shrubs, grown for their flowers and aromatic foliage, which can be used as a culinary herb. Very closely related to, and sometimes included in, the genus *Salvia*. Frost hardy, but in cold areas grow against a south- or west-facing wall. Requires sun and well-drained soil. Cut back frost-damaged plants to healthy wood in spring; straggly, old plants may be cut back hard at same time. Trim hedges after flowering. Propagate by semiripe cuttings in summer.

R. lavandulaceus of gardens. See *R. officinalis* Prostratus Group.

R. officinalis (Rosemary) illus. p.157. **var. *angustissimus* 'Benenden Blue'** (syn. *R.s.* 'Collingwood Ingram') is an evergreen, bushy, dense shrub. H and S 4ft (1.2m). Produces aromatic, narrow, dark green leaves and whorls of tubular, 2-lipped, vivid blue flowers from mid-spring to early summer. **'Collingwood Ingram'** see var. *angustissimus* 'Benenden Blue'. **'Fastigiatus'** see 'Miss Jessopp's Upright'. **'Miss Jessopp's Upright'** (syn. 'Fastigiatus', f. *pyramidalis*), H and S 6ft (2m), is vigorous, with an upright habit; good for hedging. **Prostratus Group** (syn. *R. lavandulaceus* of gardens), H 6in (15cm), is prostrate and the least hardy form. **f. *pyramidalis*** see 'Miss Jessopp's Upright'. **'Severn Sea'**, H 3ft (1m), has an arching habit, and produces bright blue flowers. **'Sissinghurst Blue'**, H 32in (80cm), is upright, with dark blue flowers. Z8–10

ROSSIOGLOSSUM

SYN. LEMBOGLOSSUM

ORCHIDACEAE

See also ORCHIDS.

R. grande, syn. *Odontoglossum grande* (illus. p.467). Evergreen, epiphytic orchid for a cool greenhouse. H 6in (15cm). Spikes of rich yellow flowers, to 6in (15cm) across and heavily marked chestnut-brown, are produced in fall. Has broadly ovate, stiff leaves, 6in (15cm) long. Provide shade in summer and keep very dry in winter. Z11–12 (min. 50ºF/10ºC; max. 86ºF/30ºC)

ROSULARIA

CRASSULACEAE

Genus of evergreen, perennial, small, rosette-forming succulents, similar to *Prometheum*, with flowers in shades of white, yellow and pink. Good for a sunny, well-drained aspect in a rock garden or alpine house. Frost hardy to frost tender. Propagate by seed in spring, or by offsets in summer or early fall.

***R. aizoon*.** See *Prometheum aizoon*.

R. sedoides* var. *alba. See *Sedum sedoides* var. *album*.

R. sempervivum*.** Variable, clump-forming succulent perennial. H 4in (10cm), S 4–6in (10–15cm). Spoon-shaped, fleshy, glandular-hairy, dark green leaves form flat, loose rosettes, 1½–3in (4–8cm) across. Bears lateral panicles of funnel-shaped, deep pink flowers, ½in (10mm) long, in summer. Z10–11 (min. 41°F/5°C). **subsp. *glaucophylla (syn. *R. spathulata* of gardens) has short-stalked rosettes of hairless, bluish-glaucous green, spathulate leaves, and glandular-sticky stems of tubular, pink flowers.

R. spathulata of gardens. See *R. sempervivum* subsp. *glaucophylla*.

ROTHMANNIA

RUBIACEAE

Genus of evergreen, summer-flowering shrubs and trees, grown for their flowers. Related to *Gardenia*. Frost tender. Needs a

position in full light or partial shade and humus-rich, well-drained, neutral to acidic soil. Water containerized plants freely when in full growth, moderately at other times. Propagate by seed in spring or by semiripe cuttings in summer.

R. capensis, syn. *Gardenia capensis, G. rothmannia*. Evergreen, ovoid shrub or tree. H 20ft (6m) or more, S 10ft (3m) or more. Leaves are ovate, lustrous, and rich green. In summer, bears fragrant, tubular flowers, each with 5 arching, white to creamy-yellow petal lobes and a purple-dotted throat. Z10–12 (min. 45–50ºF/7–10ºC)

ROYSTONEA

Royal palm

ARECACEAE/PALMAE

Genus of evergreen palms, grown for their majestic appearance. Produces racemes of insignificant flowers in summer. Frost tender. Needs full light or partial shade and fertile, well-drained but moisture-retentive soil. Water potted plants freely in full growth, less at other times, especially when temperatures are low. Propagate by seed in spring at not less than 81°F (27°C). Red spider mite may be a problem.

R. regia (Cuban royal palm). Evergreen palm with an upright stem, sometimes thickened about the middle. H to 80ft (25m), S to 30ft (10m). Leaves are feather-shaped, 10ft (3m) long, upright at first, then becoming arching and pendent, and are divided into narrowly oblong, leathery, bright green leaflets. Z12 (min. 59ºF/ 15ºC)

RUBUS

Blackberry, Bramble

ROSACEAE

Genus of deciduous, semievergreen or evergreen shrubs and woody-stemmed, scrambling climbers. Some species are cultivated solely for their edible fruits, which include raspberries and blackberries. Those described here are grown mainly for their foliage, flowers, or ornamental, often prickly stems, though some may also bear edible fruits. Fully to frost hardy. Deciduous species grown for their winter stems prefer full sun; other deciduous species need sun or partial shade; evergreens and semievergreens tolerate sun or shade. All require fertile, well-drained soil. Cut old stems of *R. biflorus, R. cockburnianus* and *R. thibetanus* to ground after fruiting. Propagate by seed or cuttings (semiripe for evergreens, softwood or hardwood for deciduous species) in summer or winter. *R. odoratus* may be increased by division, and *R.* 'Benenden' and *R. ulmifolius* 'Bellidiflorus' by layering in spring.

R. bambusarum, syn. *R.b. henryi* var. *bambusarum*. Fast-growing, vigorous, evergreen, woody-stemmed, scrambling climber, grown mainly for its attractive foliage. H to 20ft (6m). Leaves have 3 broadly ovate leaflets, white-felted beneath. Tiny, pink flowers are borne in small clusters in summer. Z6–10

***R.* 'Benenden'**, syn. *R.* 'Tridel', illus. p.128.

R. biflorus illus. p.143.

R. cockburnianus. Deciduous, arching shrub. H and S 8ft (2.5m). Prickly shoots are brilliant blue-white in winter. Dark green leaves, white beneath, each have usually 9 ovate leaflets. Bears panicles of 5-petaled, purple flowers in early summer, followed by unpalatable, spherical, black fruits. Z3–8. **'Goldenvale'** (syn. *R.c.* 'Wyego'), H and S 5ft (1.5m), is less invasive, lower growing with more arching growth, and bright yellow foliage. **'Wyego'** see *R.c.* 'Goldenvale'.

R. odoratus (Flowering raspberry, Thimbleberry). Vigorous, deciduous, upright, thicket-forming shrub. H and S 8ft (2.5m). Prickle-free, peeling shoots produce large, velvety, dark green leaves, each with 5 broadly triangular lobes. From early summer to early fall, bears large, fragrant, 5-petaled, rose-pink flowers, sometimes followed by unpalatable, flattened, red fruits. Z3–8

R. thibetanus illus. p.143.

R. tricolor. Evergreen shrub with both prostrate and arching shoots covered in red bristles. H 2ft (60cm), S indefinite. Ovate, toothed, glossy, dark green leaves set off cup-shaped, 5-petaled, white flowers borne in midsummer. Has edible, raspberrylike, red fruits. Provides good groundcover. Z7–9

***R.* 'Tridel'.** See *R.* 'Benenden'.

***R. ulmifolius* 'Bellidiflorus'.** Vigorous, deciduous or semievergreen, arching shrub. H 8ft (2.5m), S 12ft (4m). Prickly stems bear dark green leaves, with 3 or 5 ovate leaflets, and, in mid- to late summer, large panicles of daisylike, double, pink flowers. Z6–9

RUDBECKIA

Coneflower

ASTERACEAE/COMPOSITAE

Genus of annuals, biennials, and perennials grown for their flowers. Fully hardy to half hardy. Thrives in sun or shade and well-drained or moist soil. Propagate by division in spring or by seed in fall or spring.

R. fulgida (Black-eyed Susan). **var. *deamii*** (illus. p.251) is an erect perennial. H 3ft (1m), S 2ft (60cm) or more. In late summer and fall, bears daisylike, yellow flower heads with central, black cones. Has narrowly lance-shaped, mid-green leaves. Prefers moist soil.

var. *speciosa* (illus. p.251) has elliptic to lance-shaped, almost sickle-shaped, basal leaves and coarsely toothed stem leaves.

var. *sullivantii* 'Goldsturm' (illus. p.251), H 30in (75cm), S 1ft (30cm) or more, has golden flower heads. Z5–7

***R.* 'Goldquelle'.** See *R. laciniata* 'Goldquelle'.

***R.* 'Herbstsonne'** illus. p.251.

R. hirta. Moderately fast-growing, upright, branching, short-lived perennial, grown as an annual. H 1–3ft (30cm–1m, S 1–1½ft (30–45cm). Has lance-shaped, mid-green leaves and, in summer–fall, large, daisylike, deep yellow flower heads, with conical, purple centers. Needs sun and well-drained soil. Z9–11. **Becky Mixed**, H to 10in (25cm), has yellow, dark red or reddish brown flowers. **'Goldilocks'** illus. p.325. **'Irish Eyes'**, H to 2½ft (75cm), has yellow flower heads with olive-green centers. **'Marmalade'** illus. p.323. **'Rustic Dwarfs'**, H to 2ft (60cm), produces yellow, mahogany, or bronze flower heads. **'Toto Gold'** illus. p.320.

***R. laciniata* 'Golden Glow'.** Erect perennial. H 6–7ft (2–2.2m), S 2–3ft (60cm–1m). In late summer and fall, bears daisylike, double, golden-yellow flower heads with green centers. Mid-green leaves are divided into lance-shaped leaflets, themselves further cut. Prefers well-drained soil. Z4–9. **'Goldquelle'** (syn. *R.* 'Goldquelle') illus. p.222. **'Herbstsonne'** (illus. p.251) has single, bright yellow flower heads.

R. maxima (illus. p.251). Clump-forming perennial. H 6ft (2m) or more, S 2ft (60cm). Has broadly spoon-shaped, waxy, blue-green, basal leaves. In summer, stout stems bear solitary, dairylike, flower heads with slender, reflexed, yellow ray florets and large, central, black cones. Z5–9

R. occidentalis. Clump-forming perennial. H 2–6ft (60–180cm), S 1½ft (45cm) or more. Has ovate, mid-green, basal leaves. In summer, erect, leafy, occasionally branched stems bear daisylike flower heads with a large, central, brownish-black cone surrounded by short, pointed, green bracts; they have no true ray florets ("petals"). Z5–9. **'Green Wizard'** (illus. p.251), H to 6ft (2m), has a ring of large green bracts at the base of a dark brown central cone; ray-florets are absent.

R. purpurea. See *Echinacea purpurea*.

R. triloba (illus. p.251). Short-lived, upright, clump-forming perennial. H 32in (80cm), S 16in (40cm). Has 3-lobed, hairy, mid- to pale green, basal leaves. From late summer until fall frosts, leafy stems bear abundant, daisylike, bright yellow flower heads with central, blackish-brown cones. Self-seeds freely. Z4–8

RUELLIA

SYN. DIPTERACANTHUS

ACANTHACEAE

Genus of perennials and evergreen subshrubs and shrubs with showy flowers. Borderline fully hardy to frost tender. Grow in a humid atmosphere, partial shade, and in moist but well-drained soil. Propagate by stem cuttings or seed, if available, in spring.

R. amoena. See *R. graecizans*.

R. devosiana illus. p.465.

R. graecizans, syn. *R. amoena*. Evergreen, bushy subshrub with wide-spreading stems. H and S 2ft (60cm) or more. Has ovate, pointed leaves and intermittently bears clusters of small, tubular, scarlet flowers. Z11–12 (min. 54ºF/12ºC)

R. makoyana (Trailing velvet plant). Hairy, spreading perennial. H to 2ft (60cm), S 1½ft (45cm). Has ovate, silver-veined purple leaves, dark purple beneath. In summer, bears funnel-shaped, carmine-pink flowers singly from the leaf axils. Z11–12 (min. 54ºF/12ºC)

RUSCHIA

AIZOACEAE

Genus of mostly small, tufted, perennial succulents and evergreen shrubs with leaves united up to one-third of their lengths around stems or with very short sheaths. Frost tender. Needs a sunny site and well-drained soil. Propagate by seed or stem cuttings in spring or summer.

R. acuminata. Evergreen, erect, succulent shrub. H 8in (20cm), S 20in (50cm). Has woody stems as well as non-woody, bluish-green stems with darker dots. Produces solid, 3-angled, 1¼in (3cm) long leaves, each with a blunt keel and a short sheath. Daisylike, white to pale pink flowers, 1¼in (3cm) across, are borne in summer. Z10–12 (min. 45ºF/7ºC)

R. crassa. Evergreen, erect, succulent shrub. H and S 20in (50cm). Bears solid, 3-angled, bluish-green leaves, ¾in (2cm) long, with short, white hairs; undersides are keeled, each with a single tooth. Bears daisylike, white flowers, 1in (2.5cm) across, in summer. Z10–12 (min. 45ºF/7ºC)

R. macowanii. Erect, then spreading, shrubby, perennial succulent. H 8in (20cm), S 1½ft (45cm). Has solid, slightly keeled, 3-angled, gray-green leaves, to 1¼in (3cm) long. In summer, bears abundant, daisylike, bright pink flowers, 1¼in (3cm) across, with darker pink stripes. Z10–12 (min. 45ºF/7ºC)

RUSCUS

ASPARAGACEAE

Genus of evergreen, clump-forming, spring-flowering shrubs, grown for their foliage and fruits. The apparent leaves are actually flattened shoots, on which flowers and fruits are borne. Usually, separate male and female plants are required for fruiting. Is particularly useful for dry, shady sites. Fully to frost hardy. Tolerates sun or shade and any soil other than waterlogged. Cut back dead shoots to base in spring. Propagate by division in spring. ⓘ The berries of *R. aculeatus* may cause mild stomach upset if ingested.

R. aculeatus (Butcher's broom) illus. p.167. **'John Redmond'** is an evergreen dwarf, compact shrub. H and S 1½ft (45cm). A hermaphrodite cultivar, it has spine-tipped, glossy, dark green "leaves," tiny, star-shaped, green flowers in spring, and a profusion of round, orange-red berries from summer to winter. Z7–9

R. hypoglossum illus. p.167.

RUSSELIA

PLANTAGINACEAE

Genus of evergreen or deciduous shrubs and subshrubs with showy flowers. Frost tender. Needs sun or partial shade. Requires humus-rich, light, well-drained soil. Propagate by stem cuttings or division in spring.

R. equisetiformis, syn. *R. juncea* (Coral plant), illus. p.470.

R. juncea. See *R. equisetiformis*.

RUTA

Rue

RUTACEAE

Genus of evergreen or deciduous, summer-flowering subshrubs and woody-based perennials, with deeply divided, aromatic leaves, grown for their foliage and flowers and used as a medicinal herb. Fully to frost hardy. Requires a sunny position and well-drained soil. Cut back to old wood in spring to keep compact. Propagate by semiripe cuttings in summer. ⓘ All parts may cause severe discomfort if eaten; the foliage may cause photodermatitis on contact.

R. graveolens (Common rue). **'Jackman's Blue'** illus. p.159.

S

SABAL

ARECACEAE/PALMAE

Genus of evergreen fan palms, grown for their foliage and overall appearance. Frost tender. Prefers full sun and fertile, well-drained soil. Water moderately, less when not in full growth. Propagate by seed in spring. Red spider mite may be troublesome.

S. minor (Dwarf palmetto) illus. p.457.

SAGINA

CARYOPHYLLACEAE

Genus of compact, low-growing annuals and evergreen perennials, grown for their dense mats or cushions of foliage. Suitable for banks and in paving. Some species may be invasive. Fully hardy. Prefers sun and gritty, moist soil; dislikes hot, dry conditions. Propagate by division in spring, by seed in fall or, for *S. boydii*, by tip cuttings in summer. Red spider mite and aphids may cause damage.

***S. procumbens* 'Boydii'**, syn. *S. boydii,* illus. p.376.

SAGITTARIA

Arrowhead

ALISMATACEAE

Genus of deciduous, perennial, and annual, submerged and marginal water plants, grown for their foliage and flowers. Fully hardy to frost tender. Some species are suitable for pools, others for aquariums. All require full sun. Remove fading foliage as necessary. Propagate by division in spring or summer or by breaking off turions (scaly, young shoots) in spring.

***S. graminea* 'Crushed Ice'.** Deciduous, perennial, marginal water plant or bog plant. H 9in (23cm), S 6in (15cm). Produces linear, pointed leaves, marbled cream and green. Bears 3-petaled, white flowers, from early to midsummer. Z4–10

S. japonica. See *S. sagittifolia* 'Flore Pleno'.

S. latifolia (American arrowhead, Duck potato, Wapato) illus. p.434.

S. sagittifolia (Common arrowhead). Deciduous, perennial, marginal water plant. H 1½ft (45cm), S 1ft (30cm). Upright, mid-green leaves are acutely arrow-shaped. In summer, produces 3-petaled, white flowers with dark purple centers. May be grown in up to 9in (23cm) depth of water. Z6–9.

'Flore Pleno' (syn. *S. japonica*; Japanese arrowhead) has double flowers.

SAINTPAULIA

African violet

GESNERIACEAE

Genus of evergreen, rosette-forming perennials, grown for their showy flowers. Frost tender. Very closely related to *Salvia* and sometimes included in *Streptocarpus*. Needs a humid atmosphere, a constant temperature, partial shade, and fertile soil. Propagate by leaf cuttings in summer. Whitefly and mealy bug may be a problem for indoor plants.

African violet cultivars

There are over 2,000 cultivars, mainly derived from *S. ionantha*, with star- or bell-shaped, white, pink, red, blue, violet, bi- or multi-colored flowers, ½–2½in (1–6cm) across, borne throughout the year. Flowers may be single, semidouble or fully double. Petal edges may be ruffled, rounded, frilled, or fringed. The broadly ovate to ovate leaves are usually mid- or dark green, and may be feathered, flecked or variegated white, pink or cream.

See also feature panel p.472.

Cultivars are divided into 5 groups, according to rosette size. The diameter of the rosette is the measurement given below; the spread of each cultivar is the same as this:

Micro-miniature—less than 3in (8cm).
Miniature— 3–6in (8–16cm).
Semi-miniature— 6–8in (16–21cm).
Standard— 8–16in (21–40cm).
Large—over 16in (40cm).

***S.* 'Bright Eyes'** (illus. p.472). Standard group. H to 6in (15cm). Has dark green leaves and single, deep violet-blue flowers with yellow anthers. Z12 (min. 59°F/15°C)

***S.* 'Colorado'** illus. p.469.

***S.* 'Crimson Ice'.** Standard group. H 6–8in (15–20cm). Has dark green leaves and pansy-shaped, dark pink and white flowers. Z12 (min. 59°F/15°C)

***S.* 'Delft'.** Standard group. H to 6in (15cm). Has dark green leaves and large, semidouble, cornflower-blue flowers. Z12 (min. 59°F/15°C)

***S.* 'Fancy Pants'.** Standard group. H 6–8in (15–20cm). Has mid-green leaves and produces single white flowers with frilled red margins. Z12 (min. 59°F/15°C)

***S.* 'Green Lace'.** Large group. H 6in (15cm) or more. Has dark green leaves and semidouble, white-flushed, pink flowers, with wide green petal edges, and yellow anthers. Z12 (min. 59°F/15°C)

***S.* 'Ice Maiden'** (illus. p.472). Standard group. H to 6in (15cm). Has mid-green leaves and single, white flowers with purple-blue markings. Z12 (min. 59°F/15°C)

***S. ionantha*.** Evergreen, stemless, rosette-forming perennial, often forming clumps. H to 4in (10cm), S 10in (25cm). Almost rounded, scalloped, long-stalked, fleshy, usually hairy leaves, to 3in (8cm) long, are mid-green above and often reddish-green below. Loose clusters of 2–8 tubular, 5-lobed, violet-blue flowers, to 1in (2.5cm) across, are borne on stems held above leaves year-round. Z12 (min. 59°F/15°C)

***S.* 'Pat Tracey'.** Semiminiature group. H 4–6in (10–15cm). Has dark green leaves and bears double, frilly-edged white flowers with a purple margin to the petals. Z12 (min. 59°F/15°C)

***S.* 'Powder Keg'** (illus. p.472). Large group. H 4–6in (10–15cm). Has wavy, dark green leaves and semidouble, deep red flowers, with white margins to the petals. Z12 (min. 59°F/15°C)

***S.* 'Rainbow's Limelight'.** Standard group. H 4–6in (10–15cm). Has mid-green leaves and bears single, lime-green and yellow flowers. Z12 (min. 59°F/15°C)

***S.* 'Rob's Dandy Lion'.** Semiminiature group. H 4–6in (10–15cm). Has leaves variegated, dark green, white, and pink, and bears cup-shaped, semidouble, white flowers. Z12 (min. 59°F/15°C)

***S.* 'Rob's Smarty Pants'.** Miniature group. H to 3in (8cm). Has toothed, mid-green leaves and semidouble, white flowers with ruffled, blue-speckled pink edges to the petals. Z12 (min. 59°F/15°C)

***S.* 'Rococo Anna'**, syn. *S.* 'Rococo Pink' (illus. p.472). Standard group. H to 6in (15cm). Has mid-green leaves with light green bases and pale undersides. Bears double, iridescent pink flowers. Z12 (min. 59°F/15°C)

***S.* 'Rococo Pink'.** See *S.* 'Rococo Anna'.

***S.* 'Sky Bells'.** Semiminiature group. H 4–6in (10–15cm). Has mid-green leaves, speckled white along the edges. Bears bell-shaped, pale lavender flowers. Z12 (min. 59°F/15°C)

***S.* 'Zoja'** (illus. p.472). Standard group. H to 6in (15cm). Has mid-green leaves and large, single to semidouble, purple-blue flowers with a bold white line at the margin of each petal. Z12 (min. 59°F/15°C)

SALIX

Willow

SALICACEAE

Genus of deciduous trees and shrubs, grown for their habit, foliage, catkins, and, in some cases, colorful winter shoots. Male catkins are more striking than female; each plant usually bears catkins of only one sex. Fully hardy. Most prefer full sun. Most species grow well in any but very dry soil; *S. caprea, S. purpurea* and their variants also thrive in dry soil. Plants grown for their colorful winter shoots should be cut back hard in early spring, every 1–3 years. Propagate by semiripe cuttings in summer or by hardwood cuttings in winter. Fungal diseases may cause canker, particularly in *S. babylonica* and *S.* x *sepulcralis* var. *chrysocoma.* Willows may become infested with such pests as caterpillars, aphids, and gall mites.

***S. acutifolia* 'Blue Streak'.** Spreading tree. H 30ft (10m), S 40ft (12m). Has slender, arching, blue-black shoots with a blue-white bloom, and narrowly lance-shaped, tapered, dark green leaves. In early spring, bears silvery male catkins, 2in (5cm) long, with golden anthers, before the leaves. Z4–9

S. aegyptiaca (Musk willow). Vigorous, deciduous, bushy shrub or tree. H 12ft (4m), S 15ft (5m). Gray catkins that mature to yellow are produced on bare, stout shoots in late winter or early spring, before large, narrowly ovate, deep green leaves. Z4–9

S. alba (White willow). **f. *argentea*** see *S.a.* var. *sericea*. **'Britzensis'** see *S.a.* var. *vitellina* 'Britzensis'. **var. *caerulea*** (Cricket-bat willow) is a very fast-growing, deciduous, conical tree with upright branches. H 80ft (25m), S 30ft (10m). Has long, narrowly lance-shaped, deep bluish-green leaves and, in early spring, small, pendent, yellowish-green catkins. **'Chermesina'** see *S.a.* var. *vitellina* 'Britzensis'. **var. *sericea*** (syn. *S.a.* f. *argentea*, *S.a.* 'Sericea'; Silver willow), H 50ft (15m), S 25ft (8m), is a spreading tree that is conical when young and has bright silver-gray leaves. **'Sericea'** see *S.a.* var. *sericea*. **var. *vitellina*** (Golden willow) illus. p.69. **var. *vitellina* 'Britzensis'** (syn. *S.a.* 'Britzensis', *S.a.* var. *vitellinia* 'Chermesina'), has green leaves and bright orange-red, young shoots, and is usually cut back to near ground level to provide winter color. **var. *vitellina* 'Chermesina'** see *S.a.* var. *vitellina* 'Britzensis'. **var. *vitellina* 'Golden Ness'**, H 8ft (2.5m), S 5ft (1.5m), produces golden yellow winter shoots when hard pruned. **'Yelverton'**, H 8ft (2.5m), S 5ft (1.5m), produces orange-red winter shoots when hard pruned. Z4–9

S. apoda illus. p.356.

S. arbuscula (Mountain willow). Deciduous, spreading shrub. H and S 2ft (60cm) or more. In spring, dark brown stems produce narrowly ovate, toothed leaves and white-haired, sometimes red-tinged, yellow catkins. Suits a rock garden. Z3–8

S. babylonica (Weeping willow). Deciduous, weeping tree with slender, pendent shoots that reach almost to the ground. H and S 40ft (12m). Bears narrowly lance-shaped, long-pointed leaves. Has yellowish-green catkins in early spring. Susceptible to canker and has been largely replaced in cultivation by *S.* x *sepulcralis* var. *chrysocoma.* Z4–9. **var. *pekinensis* 'Tortuosa'** (syn. *S. matsudana* 'Tortuosa'; Dragon's claw willow) illus. p.80.

S. bockii. Deciduous, bushy shrub. H and S 8ft (2.5m). Has slender, upright, gray-hairy shoots and oblong, glossy, bright green leaves, with silky-hairy undersides. Usually female in cultivation; bears green catkins in early and mid-fall. Z5–8

***S.* 'Boydii'**, syn. *S.* x *boydii*, illus. p.347.

S. caprea (Goat willow, Pussy willow). Deciduous, bushy shrub or tree. H 30ft (10m), S 25ft (8m). Ovate leaves are dark green above, gray beneath. Catkins are borne in spring before foliage emerges: females are silky and gray, males are gray with yellow anthers. Z4–8. **'Kilmarnock'** (Kilmarnock willow), H 5–6ft (1.5–2m), S 6ft (2m), is dense-headed and weeping. From early to mid- spring, produces gray catkins that later become yellow.

***S.* 'Chrysocoma'.** See *S.* x *sepulcralis* var. *chrysocoma*.

S. daphnoides (Violet willow) illus. p.69.

S. elaeagnos (Hoary willow). Deciduous, upright, dense shrub. H 10ft (3m), S 15ft (5m). In spring, long shoots bear slender, yellow catkins as leaves emerge. These are narrowly oblong and dark green, with white undersides, and turn yellow in fall. Z5–8. **subsp. *angustifolia***, H and S 10ft (3m), is a medium-sized to large, dense, bushy shrub, bearing very narrow, rosemarylike leaves, to 5in (12cm) long, with recurved margins.

S. exigua (Coyote willow) illus. p.112.

S. fargesii, syn. *S. moupinensis* of gardens. Deciduous, upright, open shrub. H and S 10ft (3m). Has purplish-red winter shoots and buds. Slender, erect, green catkins are borne in spring, at same time as bold, oblong, glossy, dark green leaves. Z5–9

S.* x *fragilis, syn. *S.* x *rubens* (Crack willow). Deciduous tree with a broad, bushy head. H 50ft (15m), S 40–45ft (12–15m). Has long, narrow, pointed, glossy, bright green leaves. Catkins, borne in early spring, are yellow on male plants, green on females. Z4–8. **'Basfordiana'** has bright orange-yellow young shoots in winter and long, narrow, leaves, gray-green when young, becoming glossy, bright green in summer. Yellowish-green catkins are produced in early spring.

***S. gracilistyla*.** Deciduous, bushy shrub. H 10ft (3m), S 12ft (4m). Large, silky, gray catkins with red, then bright yellow anthers are borne in early–mid-spring, and are followed by lance-shaped, silky, gray, young leaves that mature to bright, glossy green. Z5–10. **'Melanostachys'** (syn. *S.* 'Melanostachys'; Black willow) bears almost black catkins, with red anthers, in early spring, before bright green leaves.
***S. hastata* 'Wehrhahnii'** illus. p.145.
S. helvetica illus. p.335.
***S. integra* 'Hakuro-nishiki'.** Graceful, fast-growing, rounded, spreading shrub or small tree. H and S 4–6ft (1.2–1.8m), larger if unpruned. Paired leaves emerge pink, maturing to variegated pink, creamy white, and green. Young shoots are red in winter. Slim catkins are borne in early spring, before the leaves. Often top-grafted on a stem. May burn in hot sun. Z5–8
***S. irrorata*.** Deciduous, upright shrub. H 10ft (3m), S 15ft (5m). Purple, young shoots are white-bloomed in winter. Catkins with red, then yellow anthers are borne in early to mid-spring before narrowly oblong, glossy, bright green leaves emerge. Z5–10
S. lanata (Woolly willow) illus. p.147.
'Stuartii' see *S.* 'Stuartii'.
***S. magnifica*.** Deciduous, upright shrub. H 15ft (5m), S 10ft (3m). Produces very long, slender, green catkins on stout, red shoots in spring, as large, magnolialike, blue-green leaves emerge. Z6–9
***S. matsudana* 'Tortuosa'.** See *S. babylonica* var. *pekinensis* 'Tortuosa'.
***S.* 'Melanostachys'.** See *S. gracilistyla* 'Melanostachys'.
S. moupinensis of gardens. See *S. fargesii*.
S. pentandra (Bay willow). Deciduous, large shrub, then small tree, with broad, bushy head. H and S 30ft (10m). Ovate, glossy, green leaves are blue-white beneath. Catkins—males bright yellow, females gray-green—open in early summer when the tree is in full leaf. Z2-5
S. purpurea (Purple osier). Deciduous, bushy, spreading shrub. H and S 15ft (5m). Gray male catkins, with yellow anthers, and slender, silvery-gray, female catkins are borne on slender, often purple shoots in spring, before narrowly oblong, deep green leaves emerge. Z4–8. **'Nancy Saunders'** has bluish green leaves with gray-white undersides, on slender, glossy red annual shoots. Grow as an annually pruned shrub, or it will form a small tree. **'Pendula'**, H and S 10ft (3m), has arching, whitish gray branches and long, pendent, thin, purplish red branchlets. Forms a small weeping tree when trained as a standard.
S. repens (Creeping willow) illus. p.147.
S. reticulata (Net-veined willow) illus. p.357.
***S.* x *rubens*.** See *S.* x *fragilis*.
***S. sachalinensis* 'Sekka'.** See *S. udensis* 'Sekka'.
S.* x *sepulcralis* var. *chrysocoma, syn. *S.* 'Chrysocoma', *S. vitellina* 'Pendula', (Golden weeping willow), illus. p.69. **'Erythroflexuosa'**, is a deciduous, spreading tree. H and S 15ft (5m). Has arching branches, with orange-yellow, spirally twisted young shoots, and lance-shaped, twisted, glossy, mid-green leaves, glaucous beneath. Bears slender, pale yellow catkins in spring. Z5–8
***S.* 'Stuartii'**, syn. *S. lanata* 'Stuartii'. Slow-growing, deciduous, spreading shrub. H 3ft (1m), S 6ft (2m). Has yellow winter shoots. Stout, gray-green catkins open from orange buds in spring, as ovate, woolly, gray leaves emerge. Z3–7
***S. udensis* 'Sekka'**, syn. *S. sachalinensis* 'Sekka'. Deciduous, spreading shrub. H 15ft (5m), S 30ft (10m). Has flattened shoots that are red in winter and lance-shaped, glossy, bright green leaves. Silver catkins are produced in early spring. Z4–7
***S. vitellina* 'Pendula'.** See *S.* x *sepulcralis* var. *chrysocoma*.

SALPIGLOSSIS

SOLANACEAE

Genus of annuals and short-lived perennials. Usually only annuals are grown, for color in borders or as greenhouse plants. Frost hardy to half hardy. Grow in sun and rich, well-drained soil. Stems need support. Deadhead regularly. Propagate by seed sown under glass in early spring, or in early fall for winter flowering indoors. Aphids may be troublesome.
***S. sinuata* Bolero Hybrids.** Group of moderately fast-growing, branching, upright annuals. H 2ft (60cm), S 1ft (30cm). Has lance-shaped, pale green leaves. Outward-facing, widely flared, trumpet-shaped, conspicuously veined flowers, 2in (5cm) across, are produced in summer and early fall. Available in a mixture of rich colors. Z10–11. **Casino Series** is available with red, blue, purple, yellow, or orange flowers. **'Friendship'** has upward-facing flowers in a range of colors.

SALVIA

Sage

LAMIACEAE/LABIATAE

Genus of annuals, biennials, herbaceous and evergreen perennials, and evergreen or semievergreen shrubs and subshrubs, grown for their tubular, 2-lipped, often brightly colored flowers and aromatic foliage. Leaves of some species may be used for flavoring foods. Fully hardy to frost tender. Needs sun and fertile, well-drained soil. Propagate perennials by division in spring, perennials, shrubs and subshrubs by softwood cuttings in midsummer. Sow seed of half-hardy annuals under glass in early spring and of fully-hardy species outdoors in mid-spring.
***S.* 'Amistad'** (illus. p.250). Vigorous, upright perennial or semievergreen subshrub. H 4ft (1.2m), S 6ft (2m). Has dark stems and ovate, toothed, glossy, mid-green leaves. In early summer–fall, bears closely spaced whorls of 2–4 striking, white-throated, purple flowers, 2in (5cm) long, with tubular, almost black calyces. Attractive to insects. Z9–11
S. argentea (illus. p.250). Rosette-forming, short-lived perennial. H 3ft (90cm), S 2ft (60cm). Has ovate to elliptic, toothed, silvery-woolly leaves. From mid- to late summer, bears many-branched, terminal panicles of white flowers, sometimes pink-flushed. Z5–8
***S. blepharophylla*.** Spreading, rhizomatous perennial. H and S 1½ft (45cm). Has ovate, glossy, dark green leaves and slender racemes of bright red flowers with maroon calyces, in summer–fall. Z9–11
***S. bulleyana*.** Rosette-forming perennial. H and S 2ft (60cm). Racemes of nettlelike, yellow flowers, with maroon lips, are borne in summer above a basal mass of broadly ovate, coarse, prominently veined, dark green leaves. Z7–9
S. discolor (Andean silver-leaf sage). Semievergreen, compact subshrub. H and S to 3ft (1m). Ovate, silver leaves and stems are covered in woolly, white hairs. Bears terminal racemes of purple flowers, sometimes almost black, from late summer to early fall. Z10–11 (min. 41°F/5°C)
***S. elegans* 'Scarlet Pineapple'** (Pineapple sage). Clump-forming, woody-based perennial. H and S 3ft (1m). Hairy stems bear heart-shaped, downy, glaucous leaves, which are pineapple scented when bruised. Produces loose panicles of large, crimson-pink flowers from winter to spring. Z10–11 (min. 41°F/5°C)
***S. farinacea*.** Moderately fast-growing, upright perennial, grown as an annual. H 3ft (1m), S 1ft (30cm). Has lance-shaped, mid-green leaves. Spikes of white flowers are borne in summer. Z9–11. **'Strata'** illus. p.314. **'Victoria Blue'** illus. p.312. Dwarf forms are also available.
***S. forsskaolii*.** Basal clump-forming perennial. H and S 20in (50cm). Ovate, toothed, hairy, grass-green leaves mature to dark green by summer. Sparse whorls of violet-blue flowers, with white and yellow markings on the lower lips, are produced in summer. Z5–7
S. fulgens illus. p.156.
S. glutinosa (illus. p.250). Clump-forming, sticky-hairy perennial. H and S 3ft (90cm). Branched or unbranched stems have heart-shaped, toothed, mid-green leaves. From midsummer to mid-fall, bears loose, terminal racemes of softly hairy, maroon-spotted, pale yellow flowers, with red-brown marks on lower lips. Z4–8
***S. greggii*.** Evergreen, erect subshrub. H to 3ft (1m), S to 2ft (60cm). Has narrowly oblong, matte, deep green leaves. Terminal racemes of bright red-purple flowers are borne in fall. H4. **'Devon Cream'** see *S.g.* 'Sungold'. **'Icing Sugar'** (illus. p.155) has deep purplish-pink flowers with frosted pink lower lips. **'Sungold'** (syn. *S.g.* 'Devon Cream') has warm yellow flowers.
***S. guaranitica*.** Deciduous, upright subshrub. H 8ft (2.5m), S 3ft (90cm). Branched, dark green stems bear ovate, hairy, wrinkled, mid-green leaves. Deep blue flowers, with purple calyces, are produced in terminal and axillary spikes, from late summer to fall. Z9–11.
'Black and Blue' (illus. p.250) has rich blue flowers, with dark purple-blue calyces. **'Blue Enigma'**, H and S 3ft (1m), is a clump-forming perennial, bearing long racemes of small, slightly fragrant, deep blue flowers, with green calyces, in summer–fall.
***S. haematodes*.** See *S. pratensis* Haematodes Group.
'Hot Lips' (illus. p.155). Evergreen, bushy shrub. H 3ft (1m), S 2–2½ft (60–75cm). Has ovate to elliptic, toothed, mid-green leaves. Flowers, borne in summer, have white upper flower lips and vivid red lower lips, but may also be pure white or pure red. Z7–10
***S. involucrata*.** Bushy, woody-based perennial. H 2–2½ft (60–75cm) or more, S 3ft (1m). Has ovate, mid-green leaves and, in late summer and fall, racemes of large, rose-crimson flowers. Z9–11.
'Bethellii' illus. p.221.
***S.* x *jamensis*.** Very variable, evergreen, bushy shrub. H 3ft (1m), S 2–2½ft (60–75cm). Has ovate to elliptic, toothed, mid-green leaves. In summer–fall, produces terminal racemes of 2-lipped flowers, varying in color from red to rose-pink, salmon-pink and orange to creamy-yellow. Z8–10. **'James Compton'** bears deep crimson flowers. **'La Luna'** (illus. p.155) has creamy-yellow flowers with reddish-brown hairs on upper lips. **'Maraschino'** (illus. p.155) has cherry-red flowers. **'Pat Vlasto'** bears pink-suffused, orange flowers. **'Raspberry Royale'** has bright raspberry-red flowers. **'Red Velvet'** (illus. p.155) has velvety, red flowers, with dark calyces. **'Sierra San Antonio'** (illus. p.155) bears peach-rose flowers, with yellow lower lips.
***S. jurisicii*.** Rosette-forming perennial. H 1½ft (45cm), S 1ft (30cm). Stems are clothed with mid-green leaves, divided into 4–6 pairs of linear leaflets. In early summer, produces racemes of inverted, violet-blue flowers. Z3–11
S. lavandulifolia (Spanish sage). Prostrate, woody-based perennial. H and S 1ft (30cm). Has narrowly oblong, downy, aromatic, gray-green leaves. Spikelike racemes of violet to lavender-blue flowers are borne from late spring to early summer. Z4–8
S. leucantha (Mexican bush sage). Evergreen, erect, well-branched shrub. H and S to 2ft (60cm) or more. Narrowly lance-shaped, finely wrinkled leaves are deep green above, white-downy beneath. In summer–fall, produces terminal spikes of hairy, white flowers, each from a woolly, violet calyx. Z10–11
S. microphylla* 'Cerro Potosi'** (illus. p.155). Evergreen, erect, well-branched shrub. H and S 3–4ft (1–1.2m). Has ovate to elliptic, mid- to deep green leaves. Racemes of magenta flowers, aging to purple and with purple-tinted calyces, are borne in late summer and fall. **'Kew Red'** (illus. p.155) has large, almost glabrous leaves and large, vivid red flowers. **var. *microphylla, syn. *S. neurepia*, illus. p.156. **var. *microphylla* 'La Foux'** (illus. p.155) is similar to 'Kew Red' but is more intense in color and has purplish-black calyces. **var. *microphylla* 'Newby Hall'** (illus. p.155) has pale to mid-green leaves and bright red flowers. **Pink Blush'** (illus. p.155) bears reddish-pink flowers. Z7–9
S. nemorosa, syn. *S. virgata* var. *nemorosa*. Neat, clump-forming perennial. H 3ft (90cm), S 1½ft (45cm). Has narrowly ovate, rough, mid-green leaves and, in summer, produces branching racemes densely set with violet-blue flowers. Z4–8.
'Amethyst' (illus. p.250) has violet flowers, with purple calyces and bracts.
'Caradonna' (illus. p.250), H 1ft (30cm), has blackish-purple stems and bracts, and bright purple flowers. **'East Friesland'** see *S.n.* 'Ostfriesland'. **'Lubecca'** (illus. p.250), H 1½ft (45cm), has pinkish-purple bracts and deep blue flowers.
'Ostfriesland' (syn. *S.n.* 'East Friesland; illus. p.250), H 75cm (2½ft), is smaller.

S. neurepia. See *S. microphylla* var. *microphylla*.
S. officinalis (Common sage; illus. p.155). H and S 20in (30cm). Lance-shaped, downy, aromatic, gray-green leaves are used as a culinary and medicinal herb. Lax racemes of purple-blue flowers are produced in summer. Z4–8. **'Alba'** see *S.o.* 'Albiflora'. **'Albiflora'** (syn. *S.o.* 'Alba') is an evergreen or semievergreen, bushy shrub. H 2ft (60cm), S 3ft (1m). Oblong, gray-green leaves are used as a culinary herb. Racemes of white flowers are borne in summer. **'Berggarten'** (illus. p.155), H 16in (40cm), has a spreading habit and round-tipped, silvery-gray leaves. **'Icterina'** (illus. p.155) has aromatic, gray-green leaves variegated with pale green and yellow. Occasionally bears small spikes of tubular, 2-lipped, purplish flowers. **'Purpurascens'** (illus. p.155), H 2ft (60cm), S 3ft (1m), has blue-purple flowers and purple-flushed leaves when young. **'Tricolor'** (illus. p.155) has very aromatic, cream-margined, gray-green leaves, tinged pinkish-purple when young.
S. patens (illus. p.250). Erect, tuberous perennial often grown as an annual. H 18–24in (45–60cm), S 1½ft (45cm). Branching stems bear ovate to triangular, mid-green leaves, spear-shaped at base. From midsummer to mid-fall, bears terminal racemes of widely 2-lipped, deep to pale blue or white flowers. Z8–10. **'Cambridge Blue'** has pale blue flowers. **'Oxford Blue'**, H 1ft (30cm), has violet-blue bracts.
S. pratensis. Clump-forming, woody-based perennial. H 3ft (90cm), S 1ft (30cm). Has ovate, wrinkled, toothed, mid-green, basal leaves. Erect, usually branched, terminal spikes of violet, blue, pink or white flowers are borne in summer. Z4–8. **Haematodes Group** (syn. *S. haematodes*), S 1½ft (45cm), has wavy-edged, rough, dark green leaves and lavender-blue flowers. **'Indigo'** (illus. p.250) bears dark blue flowers. **'Pink Delight'** (illus. p.250) produces mid- to deep pink flowers. **'Swan Lake'** (illus. p.250) has pure white flowers.
***S.* 'Royal Bumble'.** Compact, erect, bushy, evergreen to semievergreen subshrub or perennial. H 2ft (60cm), S 16in (40cm). Has ovate, round-tipped, aromatic, mid-green leaves. From midsummer to fall, purple-black stems bear whorls of glowing red flowers, with blackish calyces. Z7–10
S. sclarea* var. *turkestanica of gardens illus. p.313.
S. splendens. Slow-growing, bushy perennial or evergreen subshrub, grown as an annual. H to 1ft (30cm), S 8–12in (20–30cm). Has ovate, serrated, fresh green leaves, and dense racemes of scarlet flowers in summer and early fall. Z9–11. **'Blaze of Fire'** has brilliant scarlet flowers. **'Lighthouse Purple'**, H 20–28in (50–70cm), is upright and bushy, bearing intense purple flowers. **'Mojave Red'**, H 10in (25cm), is compact, with dense spikes of bright red flowers and dark green foliage.
S.* x *superba. Clump-forming, erect, branched perennial. H 2–3ft (60–90cm), S 18–24in (45–60cm). Leaves are lance-shaped to oblong, scalloped and mid-green, slightly hairy beneath. Slender, terminal racemes of bright violet or purple flowers, to ½in (1.5cm) long, are produced from midsummer to early fall. Z3–10
S.* x *sylvestris. Clump-forming, erect, branched perennial. H 32in (80cm), S 1ft (30cm). Leaves are lance-shaped to oblong, scalloped, and mid-green, softly hairy. Dense, terminal racemes of pinkish violet flowers, to ½in (1cm) long, are borne in early to midsummer. Z4–7. **'Blauhügel'** (illus. p.250), H 1½ft (45cm), has mid-blue flowers and purple bracts. **'Mainacht'** (syn. *S.* x *s.* May Night; illus. p.250), H 3ft (90cm), S 1½ft (45cm), has violet-blue flowers in late spring and summer.
S. uliginosa (Bog sage) illus. p.442.
S. verticillata. Erect perennial. H 3ft (90cm), S 18in (45cm). Has ovate to elliptic, deeply cut, dark green leaves, with large terminal lobes. Branched racemes with whorls of lilac to violet-blue, rarely white, flowers are borne in summer. Z6–10. **'Purple Rain'** (illus. p.250) has dark green leaves and red-purple flowers and stems.
S. virgata* var. *nemorosa. See *S. nemorosa*.
S. viridis, syn. *S. horminum*. Moderately fast-growing, upright, branching annual. H 1½ft (45cm), S 8in (20cm). Has ovate leaves. Tubular, lipped flowers, enclosed by purple, pink, or white bracts, are borne in spikes at tops of stems in summer and early fall. Z4–7. Bracts of **Claryssa Series** are a wide range of brilliant colors, including white, pink, purple, and blue.

SALVINIA

SALVINIACEAE

Genus of deciduous, perennial, floating water ferns, evergreen in tropical conditions and aquariums. Frost tender. Does best in warm water, with plenty of light. Remove fading foliage, and thin plants when crowded. Propagate by dividing young plants in summer.
S. natans. Deciduous, perennial, floating water plant. S indefinite. Oval to ovate, elongated, mid-green leaves are borne on branching stems. Tolerates colder conditions than other species; can be used in a cold water aquarium. Z11–12 (min. 50°F/10°C)

SAMBUCUS

Elder

ADOXACEAE

Genus of perennials, deciduous shrubs and trees, grown for their foliage, flowers, and fruits. Fully hardy. Needs sun and fertile, moist soil. For best foliage effect, either cut all shoots to ground in winter or prune out old shoots and reduce length of young shoots by half. Propagate species by softwood cuttings in summer, by seed in fall, or by hardwood cuttings in winter, some forms by cuttings only. ⓘ All parts may cause severe discomfort if ingested, although cooked fruits are safe; contact with the leaves may irritate skin.
S. canadensis, syn. *S. nigra* subsp. *canadensis* (American elder). **'Aurea'** is a deciduous, upright shrub. H and S 12ft (4m). Has large, golden-yellow leaves, usually with 7 oblong leaflets. Bears large, domed heads of small, star-shaped, creamy-white flowers in summer, followed by spherical, red fruits. Z3–9
S. nigra (Common elder). **'Aurea'** (Golden elder) is a deciduous, bushy shrub. H and S 20ft (6m). Has stout, corky shoots and golden-yellow leaves with usually 5 ovate leaflets. Flattened heads of fragrant, star-shaped, creamy-white flowers, borne in early summer, are followed by spherical, black fruits. **subsp. *canadensis*** see *S. canadensis*. **'Laciniata'** see *S.n.* f. *laciniata*. **f. *laciniata*** (syn. 'Laciniata') has irregularly and finely cut leaflets.
f. *porphyrophylla* Black Beauty ('Gerda') has dark blackish leaves and white-centered flowers with pink-tipped lobes. **f. *porphyrophylla* Black Lace ('Eva')** has deeply cut, almost black leaves and pale pink flowers fading to grayish white. **f. *porphyrophylla* 'Guincho Purple'** has dark green foliage that matures to deep blackish-purple. Bears purple-stalked flowers, pink in bud and opening to white within, pink outside.
f. *porphyrophylla* 'Thundercloud' has dark reddish purple leaves, green when young, and red buds opening to pale pink flowers that fade to white. H6
S. racemosa (Red-berried elder). Deciduous, bushy shrub. H and S 10ft (3m). Mid-green leaves each usually have 5 ovate or ovate leaflets. Star-shaped, creamy-yellow flowers, borne in dense, conical clusters in mid-spring, are followed by spherical, red fruits. Z3–6. **'Plumosa Aurea'** illus. p.139.

SANCHEZIA

ACANTHACEAE

Genus of evergreen, mainly summer-flowering perennials and shrubs, grown for their showy, tubular flowers and foliage. Frost tender. Requires full light or partial shade and fertile, well-drained soil. Water containerized plants freely when in full growth, less at other times. Tip prune young plants to promote branching. Propagate by greenwood cuttings in spring or summer. Susceptible to whitefly and soft scale.
S. nobilis of gardens. See *S. speciosa*.
S. speciosa, syn. *S. nobilis* of gardens. Evergreen, erect, soft-stemmed shrub. H 4–7ft (1.2–2.2m), S 3–5ft (90–150cm). Glossy leaves have yellow- or white-banded main veins. Tubular, yellow flowers are borne in axils of red bracts, in summer. Z11–12 (min. 55–59°F/13–15°C)

SANDERSONIA

COLCHICACEAE/LILIACEAE

Genus of one species of deciduous, tuberous climber, related to *Gloriosa* and *Littonia*, grown for its urn-shaped, summer flowers. Half hardy. Needs a sheltered, sunny site and well-drained soil. Support with sticks or canes. Lift tubers for winter. Propagate in spring by seed or by naturally divided tubers.
S. aurantiaca (Chinese-lantern lily) illus. p.413.

SANGUINARIA

PAPAVERACEAE

Genus of one species of spring-flowering, rhizomatous perennial. Fully hardy. Grow in sun or partial shade and in humus-rich, moist but well-drained soil. Excellent for a shaded rock garden, or a wild or woodland garden. Propagate by division of rhizomes in summer or by seed in fall.
S. canadensis (Bloodroot) illus. p.348.
f. *multiplex* 'Plena' (syn. *S.c.* 'Flore Pleno') is a clump-forming, rhizomatous perennial with fleshy, underground stems that exude red sap when cut. H 6in (15cm), S 1–1½ft (30–45cm). Produces short-lived, rounded, fully double, white flowers in spring, followed by large, rounded to heart-shaped, scalloped, gray-green leaves with glaucous undersides. Z3–8

SANGUISORBA

BURNET ROSACEAE

Genus of rhizomatous perennials, grown for their bottlebrushlike flower spikes. Fully hardy. Requires sun and moist soil. Propagate by division in spring or by seed in fall.
S. canadensis (Canadian burnet) illus. p.437.
S. menziesii. Clump-forming perennial. H 30in (75cm), S 2ft (60cm). In mid- to late summer, slender, arching stems bear spikes of purple-red flowers. Grey-green leaves are deeply divided and tinted red. Z4–8
S. obtusa. Clump-forming perennial. H 3–4ft (1–1.2m), S 2ft (60cm). Arching stems bear spikes of rose-crimson flowers in midsummer. Pairs of ovate leaflets are pale green above, blue-green beneath. Z4–8
S. officinalis. Clump-forming, rhizomatous perennial. H to 4ft (1.2m), S 2ft (60cm). Has pinnate basal leaves, with 7–25 oblong-elliptic leaflets; leaves on the erect, branching, often red stems are smaller. Small, red-brown to maroon flowers are borne in erect, very short, dense spikes from early summer to mid-fall. Z4–8
***S.* 'Tanna'.** Spreading, clump-forming perennial. H 2ft (60cm), S 20in (50cm). Produces short spikes of dark red flowers in mid- to late summer above mounds of divided, blue-green leaves. Tolerant of drier soil than other sanguisorbas and good at the front of a border. Z4–8
S. tenuifolia* var. *alba illus. p.216.

Sanicula epipactis. See *Hacquetia epipactis*.

SANSEVIERIA

ASPARAGACEAE

Genus of evergreen, rhizomatous perennials, grown for their rosettes of stiff, fleshy leaves. Frost tender. Tolerates sun and shade and is easy to grow in most soil conditions if not overwatered. Propagate by leaf cuttings or division in summer.
S. cylindrica. Evergreen, stemless, rhizomatous perennial. H 1½–4ft (45cm–1.2m), S 4in (10cm). Has a rosette of 3–4 cylindrical, stiff, fleshy, erect leaves, to 4ft (1.2m) long, in dark green with paler horizontal bands. Occasionally bears racemes of small, tubular, 6-lobed, pink or white flowers. Z11–12 (min. 55°F/13°C)
S. trifasciata (Mother-in-law's tongue). Evergreen, stemless, rhizomatous perennial. H 1½–4ft (45cm–1.2m), S 4in (10cm). Has a rosette of about 5 lance-shaped, pointed, stiff, fleshy, erect leaves,

to 4ft (1.2m) long, banded horizontally with pale green and yellow. Occasionally bears racemes of tubular, 6-lobed, green flowers. Z11–12 (min. 55°F/13°C).
'Golden Hahnii' illus. p.476. **'Hahnii'** illus. p.475. **'Laurentii'** illus. p.476.

SANTOLINA

ASTERACEAE/COMPOSITAE

Genus of evergreen, summer-flowering shrubs, grown for their aromatic foliage and their buttonlike flower heads. Fully hardy. Needs sun and not too rich, well-drained soil. Cut off old flower heads and reduce long shoots in fall. Cut straggly plants back hard each spring. Propagate by semiripe cuttings in summer.
S. chamaecyparissus, syn. *S. incana* (Cotton lavender, Lavender cotton). Evergreen, rounded, dense shrub. H 2½ft (75cm), S 3ft (1m). Shoots are covered with woolly, white growth, and narrowly oblong, finely toothed leaves are also white. Bears bright yellow flower heads in mid- and late summer. Z6–9. **'Lambrook Silver'** has silver-gray leaves. **'Lemon Queen'**, H and S 2ft (60cm) has a compact habit and lemon-yellow flower heads.
S. incana. See *S. chamaecyparissus*.
S. neapolitana. See *S. pinnata* subsp. *neapolitana*.
S. pinnata. Evergreen shrub, mainly grown as **subsp. *neapolitana*** (syn. *S. neapolitana*), which has a rounded, bushy habit. H 2½ft (75cm), S 3ft (1m). In midsummer, slender flower stems bear a head of lemon-yellow flowers, among feathery, deeply cut, gray-green foliage.
subsp. *neapolitana* 'Sulphurea' illus. p.159. Z7–10
S. rosmarinifolia, syn. *S. virens* (Holy flax). Evergreen, bushy, dense shrub. H 2ft (60cm), S 3ft (1m). Has finely cut, bright green leaves. Each slender stem bears a head of bright yellow flowers in midsummer. Z6–9. **'Lemon Fizz'** has striking, yellow-green foliage.
subsp. *rosmarinifolia* 'Primrose Gem' has pale yellow flower heads.
S. virens. See *S. rosmarinifolia*.

***Sanvitalia* Aztec Gold of gardens.** See *Melampodium montanum* Aztec Gold ('Starbini').

SAPONARIA

Soapwort

CARYOPHYLLACEAE

Genus of summer-flowering annuals and perennials, grown for their abundant flowers, usually in shades of pink. Good for rock gardens, screes, and banks. Fully hardy. Needs sun and well-drained soil. Propagate by seed in spring or fall or by softwood cuttings in early summer.
***S.* 'Bressingham'**, syn. *S.* 'Bressingham Hybrid'. Loose, mat-forming perennial. H 3in (8cm), S 4in (10cm). Has small, narrowly ovate leaves. Flattish, deep vibrant pink flowers are borne in clustered heads in summer. Good for a trough. Z4–9
***S.* 'Bressingham Hybrid'.** See *S.* 'Bressingham'.
S. caespitosa illus. p.364.
S. ocymoides (Tumbling tea) illus. p.364.
***S. officinalis* 'Rubra Plena'** (Double soapwort). Upright perennial. H to 3ft (1m), S 1ft (30cm). Has ovate, rough, mid-green leaves on erect stems. Clusters of ragged, double, red flowers are produced on upper part of flower stems in summer. Z2–8
S.* x *olivana illus. p.362.

SARCOCAPNOS

PAPAVERACEAE

Genus of spring-flowering dwarf annuals or perennials, useful for rock gardens. Frost hardy. Prefers a position in sun and well-drained, alkaline soil. Propagate by seed in spring.
S. enneaphylla. Loose, upright perennial. H and S 6in (15cm). Slender, much-branched stems bear small, divided, glaucous green leaves with ovate to elliptic leaflets. In spring, small, spurred, yellowish-white, purple-tipped flowers, are borne in short racemes. Protect from winter wet. Z9–11

SARCOCOCCA

Christmas box, Sweet box

BUXACEAE

Genus of evergreen shrubs, grown for their foliage, fragrant, winter flowers, and spherical fruits. Flowers are tiny—the only conspicuous part being the anthers. Useful for cutting in winter. Fully to frost hardy. Grow in sun or shade and fertile, not too dry soil. Propagate by semiripe cuttings in summer or by seed in fall.
S. confusa (illus. p.142). Evergreen, bushy, dense shrub. H and S 3ft (1m). Leaves are small, ovate, taper-pointed, glossy, and dark green. Bears tiny, white flowers in winter, then black fruits. Z6–9
S. hookeriana. Evergreen, upright, dense, suckering shrub. H 5ft (1.5m), S 6ft (2m). Forms clumps of narrowly oblong, pointed, dark green leaves and bears tiny, white flowers in the leaf axils during winter. Fruits are black. Z6–8.
var. *digyna* illus. p.164. **var. *digyna* 'Purple Stem'** has young shoots flushed dark purple-pink, and pink-tinged flowers.
var. *humilis* (syn. *S. humilis*) illus. p.164.
S. humilis. See *S. hookeriana* var. *humilis*.
S. ruscifolia. Evergreen, upright, arching shrub. H and S 3ft (1m). Has ovate, glossy, dark green leaves and, in winter, creamy-white flowers, then red fruits. Z7–9. **var. *chinensis*** has narrower leaves.
var. *chinensis* 'Dragon Gate' has narrow, pointed, shining green leaves.

SARMIENTA

GESNERIACEAE

Genus of one species of evergreen, woody-stemmed, scrambling or trailing perennial. Suits hanging baskets. Frost tender. Likes partial shade and humus-rich soil that does not dry out. Propagate by seed in spring or by stem cuttings in summer or fall.
S. repens, syn. *S. scandens*. Evergreen, slender-stemmed, scrambling perennial. H and S 2ft (60cm) or more. Tips of ovate leaves each have 3–5 teeth. In summer, produces small, tubular, coral-pink flowers, each narrowed at the base and toward the mouth, which has 5 deeper pink lobes. Z10–11 (min. 41°F/5°C)
S. scandens. See *S. repens*.

SARRACENIA

Pitcher plant

SARRACENIACEAE

Genus of insectivorous perennials, some of which are evergreen, with pitchers formed from modified leaves with hooded tops. Fully hardy to frost hardy. Grow in sun or partial shade and in peat and moss. Keep very wet, except in winter, when drier conditions are needed. Propagate by seed in spring.
S. flava (Yellow pitcher plant) illus. p.445.
S. purpurea (Common pitcher plant, Huntsman's cup) illus. p.439.

SASA

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
S. albomarginata. See *S. veitchii*.
S. palmata. Evergreen, spreading bamboo. H 6ft (2m), S indefinite. A fine foliage plant, it has very broad, rich green leaves, to 16in (40cm) long. Hollow, purple-streaked stems have one branch at each node. Z7–9
S. veitchii, syn. *S. albomarginata*, illus. p.284.

SASSAFRAS

LAURACEAE

Genus of deciduous trees grown for their aromatic foliage; flowers are inconspicuous. Fully hardy. Needs sun or light shade and deep, fertile, well-drained, preferably acidic soil. Propagate by seed or suckers in fall, or by root cuttings in winter.
S. albidum illus. p.64.

SATUREJA

LAMIACEAE/LABIATAE

Genus of summer-flowering annuals, semievergreen perennials and subshrubs, grown for their highly aromatic leaves and attractive flowers. Useful for rock gardens and dry banks. Fully hardy to frost hardy. Needs sun and well-drained soil. Propagate by seed in winter or spring, or by softwood cuttings in summer.
S. montana (Winter savory). Upright, semievergreen perennial or subshrub. H 1ft (30cm), S 8in (20cm) or more. Leaves are linear to ovate, aromatic and green or grayish-green. Loose whorls of tubular, 2-lipped, lavender flowers are borne in summer. Z6–8. **'Prostrate White'**, H 3–6in (7–15cm), has a prostrate habit and white flowers.

SAUROMATUM

ARACEAE

Genus of spring-flowering, tuberous perennials with tubular spathes that expand into waved, twisted blades. Tubers will flower without soil or moisture, and before the leaves emerge. Frost tender. Requires a sheltered, partially shaded position and humus-rich, well-drained soil. Water well throughout summer. Dry off or lift when dormant in winter. Propagate by offsets in spring.
S. guttatum. See *S. venosum*.
S. venosum, syn. *S. guttatum* (Monarch-of-the-East, Voodoo lily), illus. p.403.

SAURURUS

SAURURACEAE

Genus of deciduous, perennial, bog, and marginal water plants, grown for their foliage. Fully hardy. Prefers full sun, but tolerates some shade. Remove faded leaves and divide plants as required to maintain vigour. Propagate by division in spring.
S. cernuus (Lizard's tail) illus. p.435.

SAXEGOTHAEA

PODOCARPACEAE

See also CONIFERS.
S. conspicua (Prince Albert's yew). Conifer that is conical in mild areas, more bushy in cold districts. H 15–50ft (5–15m), S 4–5m (12–15ft). Needlelike, flattened, dark green leaves develop in whorls at ends of shoots. Produces globose, fleshy, glaucous green cones. Z8–10

SAXIFRAGA

Saxifrage

SAXIFRAGACEAE

Genus of often rosetted perennials, most of which are evergreen or semievergreen, biennials, and few annuals. Grown for their flowers and attractive foliage. Excellent in rock gardens, raised beds, and alpine houses. Fully hardy to frost tender. Propagate by seed in fall or by rooted offsets in winter. For cultivation, saxifrages may be grouped as follows:
1—Needs moist soil and protection from midday sun.
2—Needs partially shaded, well-drained soil. Good among rocks and screes.
3—Thrives in well-drained rock pockets, troughs, alpine-house pans, etc, shaded from midday sun. Must never be dry at roots. Most form tight cushions and flower in early spring, flower stems being barely visible above leaves.
4—Needs full sun and well-drained, alkaline soil. Suits rock pockets. Most have hard leaves encrusted in lime.
S. aizoides illus. p.359; cultivation group 1.
***S.* x *anglica* 'Cranbourne'**, syn. *S.* 'Cranbourne'. Evergreen, cushion-forming perennial. H and S 5in (12cm). In early spring, bears solitary, cup-shaped, bright purplish-lilac flowers on short stems, just above tight rosettes of linear, green leaves. Flower stems are longer if plant is grown in an alpine house. Cultivation group 3. Z5–9
***S.* x *apiculata* 'Gregor Mendel'**, syn. *S.* 'Gregor Mendel', illus. p.357; cultivation group 2.
***S.* 'Arco'.** See. *S.* x *arco-valleyi* 'Arco'.
***S.* x *arco-valleyi* 'Arco'**, syn. *S.* 'Arco'. Evergreen perennial forming a tight cushion. H and S 4in (10cm). In early spring, produces upturned, cup-shaped to flattish, pale lilac flowers, almost resting on tight rosettes of oblong to linear leaves. Cultivation group 3. Z5–9
***S.* 'Bob Hawkins'.** Evergreen perennial with a loose rosette of leaves. H 1–2in (2.5–5cm), S 6in (15cm). In summer, bears small, upturned, rounded, greenish-white flowers on 2in (5cm) stems. Ovate, green leaves are white-splashed. Cultivation group 1. Z5–9

***S.* x *boydii* 'Hindhead Seedling'** illus. p.356; cultivation group 2.
***S.* 'Brookside'.** See *S. burseriana* 'Brookside'.
S. brunoniana. See *S. brunonis*.
S. brunonis, syn. *S. brunoniana*. Semi-evergreen, rosetted perennial. H 4in (10cm), S 8in (20cm). Small, soft green rosettes of lance-shaped, rigid leaves produce many long, threadlike, red runners. Many of the rosettes die down to large terminal buds in winter. Short racemes of 5-petaled, spreading, pale yellow flowers are borne in late spring and summer on 2–3in (5–8cm) stems. Cultivation group 1. Z8–10
S. burseriana illus. p.348. **'Brookside'** (syn. *S.* 'Brookside') is a slow-growing, evergreen perennial forming a hard cushion. H 1–2in (2.5–5cm), S to 4in (10cm). Has broadly linear, spiky, gray-green leaves. In early spring, bears upturned, rounded, shallowly cup-shaped, bright yellow flowers on short, red stems. Flowers of **'Crenata'** (syn. *S.* 'Crenata') have fringed, white petals and red sepals. **'Gloria'** (syn. *S.* 'Gloria') has dark reddish-brown stems, each bearing 1 or 2 flowers, with red sepals and white petals, in late spring. Cultivation group 3. Z5–9
S. callosa, syn. *S. linguata*, illus. p.337; cultivation group 4.
S. cochlearis. Evergreen, rosetted perennial. H 8in (20cm), S 10in (25cm). Has spoon-shaped, green leaves with white-encrusted edges. Produces loose panicles of rounded, white flowers, often with red-spotted petals, in early summer. Z5–9. **'Minor'**, H and S 5in (12cm), has smaller leaf rosettes and loose panicles of red-spotted, white flowers on red stems. Ideal for a trough. Cultivation group 4.
S. cortusifolia* var. *fortunei. See *S. fortunei*.
S. cotyledon. Evergreen perennial. H and S to 1ft (30cm). Has large, pale green rosettes of leaves, which die after flowering. In late spring–early summer, bears arching, conical panicles of white, cup-shaped flowers, sometimes strongly marked red inside. Cultivation group 2. Z3–9
***S.* 'Cranbourne'.** See *S.* x *anglica* 'Cranbourne'.
***S.* 'Crenata'.** See *S. burseriana* 'Crenata'.
S. cuneifolia illus. p.337; cultivation group 1.
***S. exarata* subsp. *moschata* 'Cloth of Gold'** illus. p.377; cultivation group 1.
***S. federici-augusti* subsp. *grisebachii* 'Wisley Variety'**, syn. *S. grisebachii* 'Wisley Variety', illus. p.353; cultivation group 4. Z5–9
S. ferdinandi-coburgi. Evergreen, cushion-forming perennial. H and S 6in (15cm). Forms rosettes of linear, spiny, glaucous green leaves and, in early spring, bears racemes of open cup-shaped, rich yellow flowers on stems 1¼–4in (3–10cm) long. Cultivation group 3. Z5–9
S. fortunei, syn. *S. cortusifolia* var. *fortunei*. Semievergreen or herbaceous, clump-forming perennial. H and S 1ft (30cm). Rounded, 5- or 7-lobed, fleshy, green or brownish-green leaves are red beneath. In fall, bears panicles of tiny, mothlike, white flowers, with 4 equal-sized petals and one elongated petal, on upright stems. Propagate by division in spring. Z6–9. **'Rubrifolia'** has dark red flower stems and dark reddish-green leaves, beetroot-red beneath. Cultivation group 1.
S.* x *geum. Evergreen, mat-forming perennial. H 6–8in (15–20cm), S 1ft (30cm). Has shallow-rooted rosettes of spoon-shaped, hairy leaves. In summer, star-shaped, pink-spotted, white flowers, deep pink in bud, are borne on loose panicles on slender stems. Cultivation group 1. Z6–8
***S.* 'Gloria'.** See *S. burseriana* 'Gloria'.
S. granulata (Fair maids of France, Meadow saxifrage) illus. p.332. **'Plena'** is a clump-forming perennial. H 9–15in (23–38cm), S to 6in (15cm) or more. Loses its kidney-shaped, glossy, pale to mid-green leaves soon after flowering. Has a loose panicle of large, rounded, double, white flowers in late spring or early summer. Bulbils or resting buds form at base of foliage. Cultivation group 1. Z6–8
***S.* 'Gregor Mendel'.** See *S.* x *apiculata* 'Gregor Mendel'.
***S. grisebachii* 'Wisley Variety'.** See *S. federici-augustii* subsp. *grisebachii* 'Wisley Variety'.
S. hirsuta. Evergreen, mound-forming perennial. H 6–8in (15–20cm), S 8in (20cm). Has rosettes of round, hairy leaves. Bears loose panicles of tiny, star-shaped, white flowers, often yellow-spotted at the base of petals, in late spring and early summer. Cultivation group 1. Z5–9
***S.* 'Irvingii'.** See *S.* x *irvingii* 'Walter Irving'.
***S.* x *irvingii* 'Jenkinsiae'**, syn. *S.* 'Jenkinsiae', illus. p.350; cultivation group 2. **'Walter Irving'** (syn. *S.* 'Irvingii') is a slow-growing, evergreen, dense, mound-forming perennial. H ¾in (2cm), S 3in (8cm). Has minute leaves in neat rosettes. In early spring, bears stemless, cup-shaped, lilac-pink flowers. Cultivation group 3. Z5–9
***S.* 'Jenkinsiae'.** See *S.* x *irvingii* 'Jenkinsiae'.
S. lingulata. See *S. callosa*.
S. longifolia. Rosetted perennial. H 2ft (60cm), S 8–10in (20–25cm). Long, narrow, lime-encrusted leaves form attractive rosettes that, after 3–4 years, develop long, arching, conical to cylindrical panicles of numerous, rounded, 5-petaled, white flowers in late spring and summer. After flowering, rosettes die and no daughter rosettes are formed, so propagate by seed in spring or fall. Cultivation group 4. Z5–8
S. oppositifolia (Purple mountain saxifrage) illus. p.353. **'Ruth Draper'** is an evergreen, loose mat-forming perennial. H 1–2in (2.5–5cm), S 6in (15cm). Has small, opposite, oblong to ovate, white-flecked, dark green leaves closely set along prostrate stems. Large, cup-shaped, deep purple-pink flowers are borne in early spring, just above foliage. Prefers peaty soil. Cultivation group 1. Z5–8
S. paniculata. Evergreen, tightly rosetted perennial. H 6–12in (15–30cm), S 8in (20cm). In summer, bears loose panicles of rounded, usually white flowers, with or without purplish-red spots, on upright stems above rosettes of oblong to ovate, lime-encrusted leaves. Very variable in size. Pale yellow or pale pink forms also occur. Cultivation group 4. Z5–8
S. sancta illus. p.358; cultivation group 3.
S. sarmentosa. See *S. stolonifera*.
S. scardica illus. p.348; cultivation group 3.
S. sempervivum illus. p.353; cultivation group 4.
***S.* Southside Seedling Group** illus. p.338; cultivation group 3 or 4.
S. stolonifera, syn. *S. sarmentosa* (Mother of thousands). Evergreen, prostrate perennial with runners. H 6in (15cm) or more, S 1ft (30cm) or more. Has large, rounded, shallowly lobed, hairy, silver-veined, olive-green leaves that are reddish-purple beneath. Loose panicles of tiny, mothlike, white flowers, each with 4 equal-sized petals and one elongated petal, are borne in summer on slender, upright stems. Provides good ground cover. Z10–11. **'Tricolor'** (syn. *S.* 'Tricolor'; Strawberry geranium) has green-and-red leaves marked silver. Cultivation group 1.
S. stribrnyi illus. p.354; cultivation group 3.
***S.* 'Tricolor'.** See *S. stolonifera* 'Tricolor'.
***S.* 'Tumbling Waters'** illus. p.333; cultivation group 4.
S.* x *urbium (London pride). Evergreen, rosetted, spreading perennial. H 1ft (30cm), S indefinite. Has spoon-shaped, toothed, leathery, green leaves. Flower stems bear tiny, star-shaped, at times pink-flushed, white flowers, with red spots, in summer. Useful as groundcover. Cultivation group 1. Z4–9

SCABIOSA

Scabious

CAPRIFOLIACEAE

Genus of annuals, biennials, and perennials, some of which are evergreen, with flower heads that are good for cutting. Fully to frost hardy. Prefers sun and fertile, well-drained, alkaline soil. Propagate annuals by seed in spring and perennials by cuttings of young, basal growths in summer, by seed in fall, or by division in early spring.
S. arvensis. See *nautia arvensis*.
S. atropurpurea (Sweet scabious). Moderately fast-growing, upright, bushy annual. H to 3ft (1m), S 8–12in (20–30cm). Has lance-shaped, lobed, mid-green leaves. Domed heads of pincushionlike, scented, deep crimson flower heads, 2in (5cm) across, are produced on wiry stems in summer and early fall. Tall forms, H 3ft (1m), and dwarf, H 1½ft (45cm), are available with flower heads in shades of blue, purple, red, pink or white. Z4–9
***S. caucasica* 'Clive Greaves'** illus. p.271. **'Miss Willmott'** is a clump-forming perennial. H and S 2ft (60cm). Large, creamy-white flower heads, with pincushionlike centers, are produced throughout summer. Light green leaves are lance-shaped at base of plant and segmented on stems. H4
S. columbaria* subsp. *ochroleuca, syn. *S. ochroleuca*. Clump-forming perennial. H and S 3ft (1m). In late summer, branching stems bear many heads of frilled, sulphur-yellow flower heads with pincushionlike centers. Has narrowly ovate, toothed, gray-green leaves. Z4–9
S. gigantea. See *Cephalaria gigantea*.
S. graminifolia. Evergreen, clump-forming perennial, often with a woody base. H and S 6–10in (15–25cm). Has tufts of narrow, grasslike, pointed, silver-haired leaves. In summer, produces stiff stems with spherical, bluish-violet to lilac flower heads like pincushions. Suits a rock garden. Resents disturbance. Z4–9
S. lucida illus. p.341.
S. ochroleuca. See *S. columbaria* subsp. *ochroleuca*.
S. rumelica. See *nautia macedonica*.
S. tartarica. See *Cephalaria gigantea*.

SCADOXUS

AMARYLLIDACEAE

Genus of bulbous and rhizomatous perennials, grown for their spectacular, mainly spherical, umbels of red flowers. Frost tender. Needs a position in partial shade and humus-rich, well-drained soil. Reduce watering in winter. Propagate by seed or offsets in spring.
S. multiflorus, syn. *Haemanthus multiflorus*. Summer-flowering bulb. H to 3ft (1m), S 1ft (30cm). Has broadly lance-shaped to ovate, semierect, basal leaves that form a "stem" of sheathed leaf stalks. Bears a spherical head, 4–10in (10–25cm) across, of up to 200 narrow-petaled, red flowers, followed by small orange berries. Z11–12 (min. 50–59°F/10–15°C).
subsp. *katherinae* (syn. *Haemanthus katherinae;* Blood flower) illus. p.386.
S. puniceus, syn. *Haemanthus magnificus*, *H. natalensis*, *H. puniceus* (Royal paintbrush). Spring- and summer-flowering bulb. H 20in (50cm), S 6in (15cm). Has elliptic, semierect leaves in a basal cluster. Leaf bases are joined, forming a false stem. Flower stem bears up to 100 tiny, tubular, greenish-white to pink or orange-red flowers in a conical umbel, surrounded by a whorl of red bracts, then red berries. Z11–12 (min. 50–59°F/10–15°C)

SCAEVOLA

GOODENIACEAE

Genus of short-lived, mainly evergreen perennials, but also scrambling climbers, shrubs, and small trees, grown for summer display, usually in containers. Frost tender. Grow in moist but well-drained, fertile compost in sun or partial shade. Propagate by softwood cuttings in late spring or summer.
***S. aemula* 'Little Wonder'.** Evergreen, trailing, bushy perennial, grown as an annual. H 1ft (30cm), S 16in (40cm). Has spoon-shaped, rich green leaves. In summer, produces 5-lobed, blue flowers each with a yellow ring round the white throat. Z10–11 (min. 41°F/5°C)

SCHEFFLERA

SYN. BRASSAIA, HEPTAPLEURUM

ARALIACEAE

Genus of evergreen shrubs, trees, and climbers grown mainly for their handsome foliage. Frost hardy to frost tender. Grows in any fertile, well-drained but moisture-retentive soil and in full light or partial shade. Water potted specimens freely when in full growth, moderately at other times. Pruning is tolerated if needed. Propagate by air-layering in spring, by semiripe cuttings in summer, or by seed as soon as ripe, in late summer.
S. delavayi. Small, bushy, broad-headed, evergreen tree. H 12–25ft (4–8m), S 6–12ft (2–4m). Stalks, to 2ft (60cm) long, bear leaves, composed of usually 5 dark green leaflets, 4–14in (10–35cm) long, densely covered in yellow-brown or gray-white

down beneath. In late fall, bears downy, terminal panicles, composed of numerous spikes, to 1ft (30cm) long, of small, white flowers; these are followed by rounded, fleshy, black fruit. Z7–11

S. taiwaniana. Broad, rounded, evergreen shrub or small tree. H and S 6–12ft (2–4m). Reddish purple stalks, 16–20in (40–50cm) long, bear elegant leaves with 7–11 dark gray-green leaflets. In late summer–fall, bears terminal panicles, 10–20in (25–50cm) long, composed of numerous racemes or umbels of small, greenish flowers, followed by spherical, green fruit, which ripen to purple over winter. Z7–11

SCHIMA

THEACEAE

Genus of variable, evergreen trees or shrubs, grown for their foliage and flowers. Related to *Camellia*. Frost hardy to half hardy. Prefers humus-rich, well-drained, neutral to acidic soil and a sunny or partially shaded position. Water potted plants freely in full growth, moderately at other times. Pruning is tolerated if necessary. Propagate by seed as soon as ripe or by semiripe cuttings in summer.

S. argentea. Broadly conical tree or shrub. H 30ft (10m), S 20ft (6m). Oblong, lance-shaped, ovate, or obovate, tapered leaves are entire, shallowly scalloped, or toothed, papery or leathery in texture, and glossy, dark green, with red veins, often reddish beneath. From late summer to fall, red-tinged buds open to solitary, cup-shaped, fragrant white flowers, to 3in (7cm) across, with 5 or 6 rounded petals. Z9–11

SCHISANDRA

SCHISANDRACEAE

Genus of deciduous or evergreen, woody-stemmed, twining climbers. Male and female flowers are borne on separate plants, so grow plants of both sexes if fruits are required. Useful for growing against shady walls and training up pillars and fences. Fully hardy to frost hardy. Grow in sun or partial shade and rich, well-drained soil. Propagate by semiripe or greenwood cuttings in summer.

S. grandiflora. Twining, woody, deciduous climber. H 22ft (7m). Shoots are brown, almost cylindrical, and bear elliptic-oblong, pointed, prominently veined, leathery, matte, dark green leaves, paler beneath. In late spring or early summer, bears nodding, scented, white, waxy white, or pale pink flowers, each with 7–8 rounded tepals, followed, on female plants, by pendent spikes of spherical, scarlet-red berries. Z7–10. **var. *rubriflora*** of gardens. See *S. rubriflora*.

S. rubriflora, syn. *S. grandiflora* var. *rubriflora* of gardens, illus. p.202.

SCHIZANTHUS

Butterfly flower, Poor man's orchid

SOLANACEAE

Genus of annuals and some biennials, grown for their showy flowers. Excellent as potted plants. Frost hardy to frost tender. Grow in a sunny, sheltered position and in fertile, well-drained soil. Pinch out growing tips of young plants to ensure a bushy habit. Propagate by seed sown under glass in early spring for summer-fall flowers and in late summer for plants to flower in pots in late winter or spring. Prone to damage by aphids.

***S.* 'Dwarf Bouquet'** illus. p.304.

S. pinnatus. Moderately fast-growing, upright, bushy annual. H 1–4ft (30cm–1.2m), S 1ft (30cm). Has feathery, light green leaves. In summer–fall, bears rounded, lobed, multicolored flowers in shades of pink, purple, white or yellow. Z10–12 (min. 41°F/5°C). **'Hit Parade'** illus. p.305. **'Star Parade'** is compact with a distinctive pyramidal habit; in spring–fall, bears tubular, then flared, 2-lipped, white, yellow, pink, purple, or red flowers.

Schizocentron elegans. See *Heterocentron elegans*.

SCHIZOPHRAGMA

HYDRANGEACEAE

Genus of deciduous, woody-stemmed, root climbers, useful for training up large trees. Fully to frost hardy. Flowers best in sun, but will grow against a north-facing wall. Needs well-drained soil. Tie young plants to supports. Propagate by seed in spring or by greenwood or semiripe cuttings in summer.

S. hydrangeoides illus p.197.

var. *concolor* 'Moonlight' is a deciduous, woody-stemmed, root climber. H to 40ft (12m). Has broadly ovate, silvery, blue-green leaves, turning yellow in fall. Small, white or creamy-white flowers, in flat heads 8–10in (20–25cm) across, are borne on pendent side-branches in summer, and are surrounded by marginal, sterile flowers. **var. *hydrangeoides* 'Roseum'** has bractlike, pink-flushed, pale yellow sepals. Z5–9.

S. integrifolium illus. p.197.

S. viburnoides. See *Pileostegia viburnoides*.

Schizostylis. *See Hesperantha*.

SCHLUMBERGERA

CACTACEAE

Genus of bushy, perennial cacti with erect, then pendent stems and flattened, oblong stem segments with indented notches at margins—like teeth in some species. Stem tips bear flowers with prominent stigmas and stamens and with petals of different lengths set in 2 rows. Frost tender. Requires a partially shaded position and rich, well-drained soil. Propagate by stem cuttings in spring or early summer.

***S.* 'Bristol Beauty'** illus. p.488.

S.* x *buckleyi (Christmas cactus). Erect, then pendent, perennial cactus. H 6in (15cm), S 3ft (1m). Has glossy, green stem segments and red-violet flowers in midwinter. Z11–12 (min. 50°F/10°C)

***S.* 'Gold Charm'** illus. p.486.

S. truncata, syn. *Zygocactus truncatus* (Crab cactus, Lobster cactus), illus. p.487.

***S. truncata* 'Wintermärchen'.** Erect, then pendent, perennial cactus. H 6in (15cm), S 1ft (30cm). Has glossy, green stem segments. In early fall, bears white flowers that become pink-and-white in winter. Z11–12 (min. 50°F/10°C)

***S.* 'Zara'.** Erect, then pendent, perennial cactus. H 6in (15cm), S 1ft (30cm). Has glossy, green stem segments. Deep orange-red flowers are produced in early fall and winter. Z11–12 (min. 50°F/10°C)

SCHOENOPLECTUS

CYPERACEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.

***S. lacustris* subsp. *tabernaemontani* 'Zebrinus'**, syn. *Scirpus lacustris* var. *tabernaemontani* 'Zebrinus', *Scirpus tabernaemontani* 'Zebrinus', illus. p.436.

SCHWANTESIA

AIZOACEAE

Genus of cushion-forming, perennial succulents with stemless rosettes of pairs of unequal-sized, keeled leaves, and daisylike, yellow flowers. Frost tender. Needs sun and well-drained soil. Propagate by seed or stem cuttings in spring or summer.

S. ruedebuschii illus. p.491.

SCIADOPITYS

SCIADOPITYACEAE

See also CONIFERS.

S. verticillata (Japanese umbrella plant) illus. p.101.

SCILLA

SYN. CHIONODOXA, X CHIONOSCILLA

ASPARAGACEAE

Genus of mainly spring- and summer-flowering bulbs, with basal clusters of leaves and spikes of small, often blue flowers. Fully to frost hardy. Needs an open site, sun or partial shade and well-drained soil. Naturalizes under trees and shrubs or in grass. Propagate by division in late summer or by seed in fall.

S. adlamii. See *Ledebouria cooperi*.

S.* x *allenii illus. p.419.

S. bifolia. Early spring-flowering bulb. H 2–6in (5–15cm), S 1–2in (2.5–5cm). Has 2 narrowly strap-shaped, semierect, basal leaves that widen toward tips. Stem bears one-sided spike of up to 20 star-shaped, purple-blue, pink or white flowers. Z4–8

S. chinensis. See *S. scilloides*.

S. cooperi. See *Ledebouria cooperi*.

S. forbesii, syn. *Chionodoxa forbesii, S. luciliae* of gardens, *S. tmolusi*, illus. p.419. **'Pink Giant'** see *S.* 'Pink Giant'.

S. gigantea. See *S. luciliae*.

S. italica. See *Hyacinthoides italica*.

S. japonica. See *S. scilloides*.

S. litardierei, syn. *S. pratensis*. Clump-forming, early summer-flowering bulb. H 4–10in (10–25cm), S 2–3in (5–8cm). Bears up to 5 narrowly strap-shaped, semierect, basal leaves. Stem has a dense spike of flat, star-shaped, violet flowers, ½–⅝in (1–1.5cm) across. Z4–8

S. luciliae, syn. *Chionodoxa gigantea*, illus. p.420. **'Pink Giant'** see *S.* 'Pink Giant'.

S. luciliae of gardens. See *S. forbesii*.

S. mischtschenkoana, syn. *S. tubergeniana*, *S.* 'Tubergeniana', illus. p.420.

S. natalensis. See *Merwilla plumbea*.

S. non-scripta. See *Hyacinthoides non-scripta*.

S. nutans. See *Hyacinthoides non-scripta*.

S. peruviana illus. p.423.

***S.* 'Pink Giant'**, syn. *S. forbesii* 'Pink Giant', *S. luciliae* 'Pink Giant', illus. p.416.

S. pratensis. See *S. litardierei*.

S. sardensis, syn. *Chionodoxa sardensis*. Early spring-flowering bulb. H 4–8in (10–20cm), S 1–2in (2.5–5cm). Has 2 narrowly lance-shaped, semierect, basal leaves. Leafless stem bears 4–15 flattish, slightly pendent or outward-facing, deep rich blue flowers, with or without an indistinct, white eye. Z4–8

S. scilloides, syn. *S. chinensis*, *S. japonica*, illus. p.413.

S. siberica (Siberian squill). **'Alba'** illus. p.416. **'Atrocoerulea'** illus. p.420.

S. tmolusi. See *S. forbesii*.

S. tubergeniana. See *S. mischtschenkoana*.

***S.* 'Tubergeniana'.** See *S. mischtschenkoana*.

S. violacea. See *Ledebouria socialis* 'Violacea'.

SCINDAPSUS

ARACEAE

Genus of evergreen climbers, closely related to *Epipremnum*, which are grown for their attractive leaves with pointed tips. Frost tender. In frost-prone regions, grow under glass or as house plants and provide a moss pole for support. In warmer areas, grow against a wall, over a pergola, or through a tree. Outdoors, requires fertile, moist, but well-drained soil and partial shade. Indoors, needs bright, filtered light and plenty of water in the growing season; water sparingly during winter. Prune in early spring and propagate by stem-tip cuttings in summer with bottom heat, or by layering in spring and summer.

***S. aureus* 'Marble Queen'.** See *Epipremnum aureum* 'Marble Queen'.

***S. pictus* 'Argyraeus'**, syn. *Epipremnum pictum* 'Argyraeum' (Silver vine). Slow-growing, evergreen, woody-stemmed, root climber. H 6–10ft (2–3m) or more. Produces satin-texutured, heart-shaped, deep green leaves with silver margins and irregular silver blotches on the upper surface. Z12 (min. 59°F/15°C)

SCIRPOIDES

CYPERACEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.

S. holoschoenus, syn. *Scirpus holoschoenus* (Round-headed club-rush). **'Variegatus'** is an evergreen, tuft-forming, perennial rush. H 3ft (1m), S 1½ft (45cm). Rounded, leafless, green stems are striped horizontally with cream and bear long-stalked, dense, spherical heads of egg-shaped, awned, brown spikelets, from midsummer to early fall. Z6–9

Scirpus holoschoenus. See *Scirpoides holoschoenus*.

***Scirpus lacustris* 'Spiralis'.** See *Juncus effusus* 'Spiralis'.

***Scirpus lacustris* subsp. *tabernaemontani* 'Zebrinus'.** See *Schoenoplectus lacustris* subsp. *tabernaemontani* 'Zebrinus'.

Scirpus setaceus. See *Isolepsis setaceus*.

***Scirpus tabernaemontani* 'Zebrinus'.** See *Schoenoplectus lacustris* subsp. *tabernaemontani* 'Zebrinus'.

SCLEROCACTUS

SYN. ANCISTROCACTUS

CACTACEAE

Genus of perennial cacti, grown for their depressed-spherical to club-shaped or columnar stems, each with a long, fleshy tap root, and deeply notched or warty ribs. Frost tender. Needs full sun with some midday shade and very well-drained soil. Propagate by seed in spring.

S. scheeri, syn. *Ancistrocactus megarhizus*, *A. scheeri*, *Echinocactus scheeri*, illus. p.495.

S. uncinatus, syn. *Ancistrocactus uncinatus*, *Echinocactus uncinatus*, *Glandulicactus uncinatus*, *Hamatocactus uncinatus*. Globose to columnar, perennial cactus. H 8in (20cm), S 4in (10cm). Stem is blue-green. Areoles each produce 1–4 very long, hooked, reddish spines and 15–18 straight ones. In spring, has cup-shaped, brown-green or reddish flowers, ¾in (2cm) across. Z10–12 (min. 45–50°F/7–10°C)

SCOLIOPUS

LILIACEAE

Genus of spring-flowering herbaceous perennials. Usually grown in alpine houses, where the neat habit and curious flowers, which arise directly from the rootstock early in the season, may be better appreciated. Also suits rock gardens and peat beds. Frost hardy. Needs sun or partial shade and moist, well-drained soil. Propagate by seed when fresh, in summer or fall.

S. bigelowii, syn. *S. bigelovii*, illus. p.349.

Scolopendrium vulgare. See *Asplenium scolopendrium*.

SCOPOLIA

SOLANACEAE

Genus of spring-flowering perennials. Fully hardy. Prefers shade and fertile, very well-drained soil. Propagate by division in spring or by seed in fall. ⓘ All parts are highly toxic if ingested.

S. carniolica illus. p.260.

SCUTELLARIA

Skullcap

LAMIACEAE/LABIATAE

Genus of annuals, rhizomatous and clump-forming perennials, and rarely subshrubs, grown for their summer flowers. Fully hardy to frost hardy. Needs sun and well-drained soil. Smaller species are good for a rock garden; taller species for the front of a border. Propagate by softwood cuttings in summer or by seed in fall.

S. indica. Upright, rhizomatous perennial. H 6–12in (15–30cm), S 4in (10cm) or more. Leaves are ovate, toothed, and hairy. Bears dense racemes of long-tubed, 2-lipped, slate-blue, occasionally white flowers in summer. Suits a rock garden. Z5–9

S. orientalis illus. p.372.

S. scordiifolia. Mat-forming, rhizomatous perennial. H and S 6in (15cm) or more. Bears narrowly ovate, wrinkled leaves. In summer–fall, bears racemes of tubular, hooded, purple flowers, each with a white-streaked lip. Propagate by division in spring. Z4–8

SEDUM

SYN. PHEDIMUS, PETROSEDUM

Stonecrop

CRASSULACEAE

Genus of often fleshy or succulent annuals, evergreen biennials, mostly evergreen or semievergreen perennials, and evergreen shrubs and subshrubs, suitable for rock gardens and borders. Many species are also used in green roof planting. Fully hardy to frost tender. Needs sun. Does best in fertile, well-drained soil. Propagate perennials, subshrubs, and shrubs by division, or by softwood cuttings of non-flowering shoots from spring to midsummer, or by seed in fall or spring. Propagate annuals and biennials by seed, sown under glass in early spring or outdoors in mid-spring. ⓘ All parts may cause mild stomach upset if ingested; contact with the sap may irritate skin.

S. acre (Biting stonecrop, Common stonecrop) illus. p.371. **'Aureum'** illus. p.371.

S. aizoon, syn. *Phedimus aizoon*. Evergreen, erect perennial. H and S 1½ft (45cm). Mid-green leaves are oblong to lance-shaped, fleshy, and toothed. In summer, bears flat heads of star-shaped bright yellow flowers. Z5–8. **'Aurantiacum'** has rounded heads of dark yellow flowers, followed by red seed capsules.

S. anacampseros. See *Hylotelephium anacampseros*.

***S.* 'Autumn Joy'.** See *Hylotelephium* 'Herbstfreude'.

***S.* 'Bertram Anderson'.** See *Hylotelephium* 'Bertram Anderson'.

S. caeruleum illus. p.315.

S. cauticola. See *Hylotelephium cauticola*.

S. erythrostictum. See *Hylotelephium erythrostictum.* **'Frosty Morn'** see *H.e.* 'Frosty Morn'. **'Mediovariegatum'** see *H.e.* 'Mediovariegatum'.

S. ewersii. See *Hylotelephium ewersii.*

***S.* 'Herbstfreude'.** See *Hylotelephium* 'Herbstfreude'.

S. heterodontum. See *Rhodiola heterodonta*.

S. kamtschaticum, syn. *Phedimus kamtschaticus*. Semievergreen, prostrate perennial with overwintering foliage rosettes. H 2–3in (5–8cm), S 8in (20cm). Has narrowly ovate, toothed, fleshy, mid-green leaves. Spreading, terminal clusters of star-shaped, orange-flushed, yellow flowers are borne in summer–fall. H6. **'Variegatum'** illus. p.377. **'Weihenstephaner Gold'** bears golden yellow flowers on red stems.

S. lydium illus. p.374.

S. makinoi. Mat-forming, evergreen perennial. H 2in (5cm), S to 1ft (30cm). Has rounded green leaves and produces small, star-shaped, bright yellow flowers in summer. Tolerates some shade, but will not survive prolonged frost. Z10–11. The golden-leaved **'Ogon'** can be grown as a house plant.

***S.* 'Matrona'.** See *Hylotelephium* 'Matrona'.

S. morganianum (Burro's tail, Donkey-tail). Evergreen, prostrate, succulent perennial. H 1ft (30cm) or more, S indefinite. Has oblong to lance-shaped, almost cylindrical, fleshy, waxy, white leaves. Bears terminal clusters of star-shaped, rose-pink flowers in summer. Z10–11

S. obtusatum illus. p.374.

S. palmeri. Evergreen, clump-forming perennial. H 8in (20cm), S 1ft (30cm). Bears sprays of star-shaped, yellow or orange flowers in early summer above oblong-ovate to spoon-shaped, fleshy, gray-green leaves. Z7–10

***S. polytrichoides* 'Chocolate Ball'.** Evergreen, tufted perennial. H 5in (13cm), S 1ft (30cm). Stems are densely covered in narrow leaves that become reddish-brown in strong light, and dark green in shade. Small yellow flowers may be produced in summer. Best overwintered as rooted cuttings in an alpine house. Z8–10

S. populifolium. See *Hylotelephium populifolium*.

***S.* 'Red Cauli'.** See *Hylotelephium* 'Red Cauli'.

S. reflexum. See *S. rupestre*.

S. rosea. See *Rhodiola rosea*. **var. *heterodontum*** see *Rhodiola heterodonta*.

S.* x *rubrotinctum. Evergreen subshrub. H 9½in (24cm), S 8in (20cm). Bean-shaped succulent red leaves are spirally arranged on upright stems. Small clusters of yellow star-shaped flowers are borne in early summer. Z9–11

***S.* 'Ruby Glow'.** See *Hylotelephium* 'Ruby Glow'.

S. rupestre, syn. *S. reflexum*, *Petrosedum repestre* (Reflexed stonecrop), illus. p.345.

S. sedoides* var. *album, syn. *Rosularia sedoides* var. *alba*. Mat-forming, succulent perennial. H 4in (10cm), S 8in (20cm). Has numerous red stolons and small rosettes of hairy, spathulate, light green, fleshy leaves. In summer, bears short-stemmed clusters of white, star-shaped flowers. Needs moist but well-drained soil. Z6–9

S. sempervivoides. See *Prometheum sempervivoides.*

***S. sieboldii* 'Foliis Medio-variegatis'.** See *Hylotelephium sieboldii* 'Misebaya-nakafu'. **'Mediovariegatum'** see *H.s.* 'Misebaya-nakafu'.

S. spathulifolium illus. p.374. **'Cape Blanco'** (syn. *S.s.* 'Cappa Blanca') illus. p.375.

S. spectabile. See *Hylotelephium spectabile*. **'Brilliant'.** See *H.s.* Brilliant Group 'Brilliant'. **'Iceberg'.** See *H.s.* 'Iceberg'. **'Stardust'.** See *H.s.* 'Stardust'.

S. spurium, syn. *Phedimus spurius.* Semi-evergreen, mat-forming, creeping perennial. H 4in (10cm) or more, S indefinite. Has hairy stems and oblong to ovate, toothed leaves. In summer, bears large, slightly rounded heads of small, star-shaped flowers. Flower color varies from deep purple to white. H6. **'Atropurpureus'** is one of several similar clones with dark red leaves. **'Tricolor'** is variegated, with a cream margin to the green centered leaves, and red stems.

***S.* 'Stewed Rhubarb Mountain'.** See *Hylotelephium* 'Stewed Rhubarb Mountain'.

S. tatarinowii. See *Hylotelephium tatarinowii*.

S. telephium. See *Hylotelephium telephium*. **Atropurpureum Group** see *H.t.* Atropurpureum Group. **'Gooseberry Fool'** see *H.t.* subsp. *maximum* 'Gooseberry Fool'. **'Purple Emperor'** see *H.t.* Atropurpureum Group 'Purple Emperor'. **'Strawberries and Cream'** see *H.t.* 'Strawberries and Cream'.

***S. tetractinum* 'Coral Reef'.** Evergreen, mat-forming perennial. H 3in (8cm), S 1ft (30cm) or more. Produces stems with round, thin, reddish-green leaves, that turn deeper red in full sun, and bears sporadic yellow flowers in summer. Z5–8

SELAGINELLA

SELAGINELLACEAE

Genus of evergreen, mosslike perennials, grown for their foliage. Frost tender. Prefers partial shade and needs moist but well-drained, peaty soil. Remove faded foliage regularly. Propagate from pieces that have been broken off plant, with roots attached, in any season.

S. kraussiana illus. p.478. **'Aurea'** is an evergreen, mosslike perennial. H ½in (1cm), S indefinite. Spreading, filigreed, bright yellowish-green fronds are much-branched, denser toward the growing tips, and easily root on soil surface. **'Brownii'**, H 2in (5cm), S 6in (15cm), forms small cushions. Z10–11 (min. 41–45°F/5–7°C)

S. lepidophylla (Resurrection plant, Rose of Jericho). Evergreen, mosslike perennial. H and S 4in (10cm). Bluntly rounded, emerald-green fronds, aging red-brown or gray-green, are produced in dense tufts. On drying, fronds curl inward into a tight ball; they unfold when placed in water. Z10–11 (min. 41–45°F/5–7°C)

S. martensii illus. p.478.

SELENICEREUS

CACTACEAE

Genus of summer-flowering, mostly scandent or semipendent, perennial cacti with climbing, 4–10-ribbed, green stems, to ¾in (2cm) across. Nocturnal, funnel-shaped flowers eventually open flat. Frost tender. Needs sun or partial shade and rich, well-drained soil. Propagate by seed or stem cuttings in spring or summer.

S. grandiflorus (Queen-of-the-night) illus. p.479.

SELINUM

APIACEAE/UMBELLIFERAE

Genus of summer-flowering perennials, ideal for informal gardens and backs of borders. Fully hardy. Prefers sun, but will grow in partial shade, and any well-drained soil. Once established, roots resent disturbance. Propagate by seed when fresh, in summer or fall.

S. tenuifolium. See *S. wallichianum*.

S. wallichianum illus p.230.

SEMELE

ASPARAGACEAE

Genus of one species of evergreen, twining, woody climber. Male and female flowers are produced on the same plant. Half hardy. Needs partial shade and

prefers rich, well-drained soil. Propagate by division or seed in spring.
S. androgyna (Climbing butcher's broom). Evergreen climber, twining in upper part, branched and bearing ovate cladodes, 2–4in (5–10cm) long. H 22ft (7m). In early summer, bears star-shaped, cream flowers in notches on cladode margins, followed by orange-red berries. Z10–11

SEMIAQUILEGIA

RANUNCULACEAE

Genus of perennials, grown for their flowers. These differ from those of *Aquilegia*, with which it is sometimes included, by having no spurs. Excellent for rock gardens. Fully hardy. Requires a sunny position and moist but well-drained soil. Propagate by seed in fall.
S. ecalcarata illus. p.341.

SEMIARUNDINARIA

GRAMINEAE/POACEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
S. fastuosa, syn. *Arundinaria fastuosa* (Narihira bamboo), illus. p.287.

SEMPERVIVUM

Houseleek

CRASSULACEAE

Genus of evergreen succulent perennials that spread by short stolons. Grown for their symmetrical rosettes of ovate to strap-shaped, pointed, fleshy leaves. Forms ground-hugging mats, suitable for rock gardens, screes, walls, banks, and alpine houses. Flowers are star-shaped with 8–16 spreading petals. Fully hardy. Requires sun and gritty soil. Takes several years to reach flowering size. Rosettes die after flowering but leave numerous offsets. Propagate by offsets in summer.
S. arachnoideum (Cobweb houseleek; illus. p.377). Evergreen, mat-forming perennial. H 2–5in (5–12cm), S 4in (10cm) or more. Rosettes of ovate, fleshy leaves, with red tips, are covered in a web of white hairs. Bears loose clusters of star-shaped, rose-red flowers in summer. Z4–10
***S.* 'Blood Tip'** (illus. p.377). Evergreen, basal-rosetted, mat-forming succulent. H to 4in (10cm), S to 1ft (30cm). Has thick, green leaves strongly suffused purple-red with deeper red, bristlelike tips. Z5–9
S. calcareum (illus. p.377). Variable, evergreen, mat-forming, basal-rosetted perennial. H 2–3in (5–7cm), S 8–10in (20–25cm). Has bluish-green leaves with dark reddish-brown tips. In summer, erect stems bear terminal clusters of star-shaped, red-based, creamy-white flowers. Excellent for a trough or on a dry wall. Z5–9.
'Extra' (illus. p.377) has intense, dark leaf tips.
S. ciliosum illus. p.375.
***S.* 'Commander Hay'.** Evergreen, basal-rosetted perennial. H 6in (15cm), S to 1ft (30cm). Mainly grown for its very large, dark red rosettes to 4in (10cm) across. Terminal clusters of dull greenish-red flowers are produced in summer. Z4–10
***S.* 'Gallivarda'** (illus. p.377). Evergreen, mat-forming, basal-rosetted perennial. H 2–3in (5–8cm), S 8–10in (20–25cm). Red leaves turn to orange-red in summer, then to purplish-red. Z5–9
S. giuseppii (illus. p.377). Vigorous, evergreen, prostrate perennial. H in flower 3–4in (8–10cm), S 4in (10cm). Leaves are hairy, especially in spring, and have dark spots at tips. Produces terminal clusters of star-shaped, deep pink or red flowers in summer. Z4–10
S. globiferum* subsp. *globiferum*.** See *Jovibarba sobolifera*. **subsp. *hirtum see *Jovibarba hirta*.
***S. grandiflorum*.** Evergreen, basal-rosetted perennial. H 4in (10cm), S to 8in (20cm). Variable, densely haired, red-tinted, dark green rosettes exude a goatlike smell when crushed. Produces loose, terminal clusters of yellow-green flowers, stained purple in centers, on long flower stems in summer. Prefers humus-rich, acidic soil. Z4–10
***S.* 'Gulle Dame'** (illus. p.377). Evergreen, mat-forming, basal-rosetted perennial. H 2–3in (5–8cm), S 8–10in (20–25cm). Has dark red leaves with long, white hairs, in spring and summer, gradually changing to green in winter. Z5–9
***S.* 'Kappa'** (illus. p.377). Evergreen, mat-forming, basal-rosetted perennial. H 2–3in (5–8cm), S 6–8in (15–20cm). Deep purple-red leaves are covered in cobwebs of white hairs. Z5–9
S. montanum (illus. p.377). Evergreen, mat-forming perennial. H 3–6in (10–15cm), S 4in (10cm). Has dark green rosettes of fleshy, hairy leaves. Star-shaped, wine-red flowers are borne in terminal clusters in summer. A variable plant that hybridizes freely. Z4–10
***S.* 'Rosie'** (illus. p.377). Evergreen, mat-forming, open-rosetted perennial. H 2–3in (5–8cm), S 8–10in (20–25cm). Green-flushed, purple-red leaves have short, marginal hairs. Z5–9
S. tectorum (Common houseleek; illus. p.377). Vigorous, evergreen perennial. H 4–6in (10–15cm), S to 8in (20cm). Has thick, bristle-tipped, blue-green leaves, often suffused red-purple. In summer, bears clusters of star-shaped, reddish-purple flowers on stems 1ft (30cm) tall. Z4–10

SENECIO

ASTERACEAE/COMPOSITAE

Genus of annuals, biennials, succulent and non-succulent perennials, and evergreen shrubs, subshrubs, small trees, and twining climbers, grown for their foliage and usually daisylike flower heads. Some shrubby species are now included in *Brachyglottis*. Shrubs are good for coastal gardens. Fully hardy to frost tender. Most prefer full sun and well-drained soil. Propagate shrubs and climbers by semiripe cuttings in summer, annuals by seed in spring, perennials by division in spring. ⓘ All parts may cause severe discomfort if ingested.
***S. articulatus*.** See *Curio articulata*.
***S. cineraria*.** See *Jacobea maritima*.
***S. clivorum* 'Desdemona'.** See *Ligularia dentata* 'Desdemona'.
***S. compactus*.** See *Brachyglottis compacta*.
***S. confusus*.** See *Pseudogynoxys chenopodioides*.
***S. cruentus*.** See *Pericallis* x *hybrida*.
***S.* Dunedin Hybrids.** See *Brachyglottis* Dunedin Group.
***S. elegans*.** Moderately fast-growing, upright annual. H 1½ft (45cm), S 6in (15cm). Has ovate, deeply lobed, deep green leaves. Daisylike, purple flower heads are borne in summer. Z9–11
S. grandifolius, syn. *Telanthophora grandifolia*. Evergreen, erect, robust-stemmed shrub. H 10–15ft (3–5m), S 6–10ft (2–3m). Ovate, toothed, boldly veined leaves, 8–18in (20–45cm) long, are glossy, rich green above, red-brown-hairy beneath. In winter–spring, bears terminal clusters, 1ft (30cm) across, of small, daisylike, yellow flower heads. Z10–12 (min. 41°F/5°C).
S. grayi of gardens. See *Brachyglottis* Dunedin Group.
***S.* x *hybridus*.** See *Pericallis* x *hybrida*.
***S. laxifolius*.** See *Brachyglottis laxifolia*.
S. laxifolius of gardens. See *Brachyglottis* Dunedin Group.
S. macroglossus (Natal ivy, Wax vine). Evergreen, woody-stemmed, twining climber. H 10ft (3m). Leaves are sharply triangular, fleshy-textured and glossy. Loose clusters of daisylike flower heads, each with a few white ray petals and a central, yellow disc, are borne mainly in winter. Z10–12 (min. 41–45°F/5–7°C).
'Variegatus' illus. p.464.
***S. maritimus*.** See *Jacobea maritima*.
***S. mikanioides*.** See *Delairea odorata*.
***S. monroi*.** See *Brachyglottis monroi*.
***S. przewalskii*.** See *Ligularia przewalskii*.
S. pulcher illus. p.278.
***S. reinoldii*.** See *Brachyglottis rotundifolia*.
***S. rotundifolius*.** See *Brachyglottis rotundifolia*.
***S. rowleyanus*.** See *Curio rowleyana*.
***S. smithii*.** Bushy perennial. H 3–4ft (1–1.2m), S 2½–3ft (75cm–1m). Woolly stems are clothed with long, ovate, toothed, leathery, dark green leaves. Daisylike, white flower heads with yellow centers are borne in terminal clusters, up to 6in (15cm) across, in early summer. Likes a boggy conditions. Z8–10
***S.* 'Spring Glory'.** See *Pericallis* x *hybrida* 'Spring Glory'.
***S.* 'Sunshine'.** See *Brachyglottis* Dunedin Group 'Sunshine'.
***S. tamoides*.** Evergreen, woody-stemmed, twining climber. H 15ft (5m) or more. Has ivy-shaped, light green leaves. In fall–winter, produces daisylike, yellow flower heads with only a few ray petals. Z10–12 (min. 41–45°F/5–7°C).

SENNA

CAESALPINIACEAE/LEGUMINOSAE

Genus of evergreen trees, shrubs, and perennials, grown for their pealike flowers. Fully hardy to frost tender. Needs full sun and moist but well-drained soil. Propagate by seed sown in spring, or by semiripe cuttings in summer. Divide perennials in spring.
S. artemisioides, syn. *Cassia artemisioides* (Silver cassia, Wormwood cassia). Evergreen, erect to spreading, wiry shrub. H and S 3–6ft (1–2m). Leaves each have 6–8 linear leaflets covered with silky, white down. Bears axillary spikes of cup-shaped, yellow flowers from winter to early summer. Z10–12 (min. 50°F/10°C)
S. corymbosa, syn. *Cassia corymbosa*, illus. p.459.
S. didymobotrya, syn. *Cassia didymobotrya* (Golden wonder), illus. p.459.
S.* x *floribunda, syn. *Cassia corymbosa* var. *plurijuga*, *C.* x *floribunda*. Vigorous, evergreen or deciduous, rounded shrub with robust stems. H and S 5–6ft (1.5–2m). Bright green leaves consist of 4–6 ovate leaflets. Bears very large clusters of bowl-shaped, rich yellow flowers in late summer. Z10–12 (min. 45°F/7°C)
S. siamea, syn. *Cassia siamea*. Fast-growing, evergreen, rounded tree. H and S 25–30ft (8–10m) or more. Leaves, 6–12in (15–30cm) long, have 7–12 pairs of elliptic leaflets. Large terminal panicles of small, cup-shaped, bright yellow flowers are borne in spring, followed by flat, dark brown pods, to 9in (23cm) long. Z12 (min. 16–18°C/61–64°F)

SEQUOIA

CUPRESSACEAE

See also CONIFERS.
S. sempervirens (Redwood) illus. p.97.

SEQUOIADENDRON

CUPRESSACEAE

See also CONIFERS.
S. giganteum (Giant redwood, Wellingtonia) illus. p.98. **'Pendulum'** is a weeping conifer. H 30ft (10m), S 6ft (2m) or more. Bark is thick, soft, fibrous and red-brown. Has spiraled, needlelike, incurved, gray-green leaves that darken and become glossy. Z6–8

SERAPIAS

ORCHIDACEAE

See also ORCHIDS.
***S. cordigera*.** Deciduous, terrestrial orchid. H 16in (40cm). Produces lance-shaped leaves; leaf bases and stem bracts are usually spotted or veined purple. In spring, spikes, 10–18in (25–45cm) high, bear 4–10 flowers, each with a deep purple to maroon hood, and a heart-shaped, dark purple, hairy lip with 2 purple-black ridges at its base. Grow in partial shade. Z6–9

SERENOA

ARECACEAE/PALMAE

Genus of one species of evergreen fan palm, grown for its foliage. Frost tender. Requires full light or partial shade and well-drained soil. Water potted plants moderately in growing season, less at other times. Propagate by seed or suckers in spring. Red spider mite may be a problem.
S. repens (Saw palmetto, Scrub palmetto). Evergreen, rhizomatous fan palm, usually stemless. H 2–3ft (60cm–1m), S 6ft (2m) or more. Palmate leaves, 18–30in (45–75cm) wide, are gray to blue-green, and divided into 6–20 strap-shaped lobes. Clusters of tiny, fragrant, cream flowers are hidden among leaves in summer, and followed by egg-shaped, purple-black fruits. Z9–11

SERISSA

RUBIACEAE

Genus of evergreen shrubs, grown for their overall appearance. Frost tender. Needs sun or partial shade and fertile,

well-drained soil. Water potted specimens moderately, less when not in growth. May be trimmed after flowering. Propagate by semiripe cuttings in summer.
S. foetida. See *S. japonica*.
S. japonica, syn. *S. foetida*. Evergreen, spreading to rounded, freely branching shrub. H to 2ft (60cm), S 2–3ft (60cm–1m). Has tiny, ovate, lustrous, deep green leaves. Small, funnel-shaped, 4- or 5-lobed, white flowers are borne from spring to fall. Z10–12 (min. 45°F/7°C)

SERRATULA

ASTERACEAE/COMPOSITAE

Genus of perennials, grown for their thistlelike flower heads. Fully hardy. Requires sun and well-drained soil. Propagate by seed or by division in spring.
S. seoanei. See *S. tinctoria* subsp. *seoanei*.
S. tinctoria* subsp. *seoanei, syn. *S. seoanei, S. shawii*. Upright, compact perennial. H 9in (23cm), S 5–6in (12–15cm). Stems bear feathery, finely cut leaves and, in fall, terminal panicles of small, thistlelike, pinkish-purple flower heads. Useful in a rock garden. Z5–8
S. shawii. See *S. tinctoria* subsp. *seoanei*.

SESLERIA

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
S. albicans. See *S. caerulea*.
S. caerulea, syn. *S. albicans* (Blue moor grass). Vigorous, evergreen, densely tufted, mound-forming perennial grass. H to 1ft (30cm), S 10in (25cm). Has pale blue-gray leaves, glossy, dark green beneath. From mid-spring to early summer, produces bluish-purple, rarely greenish-white, spikelets in dense panicles, just above the foliage. Z5–9
S. heufleriana (Balkan blue grass). Evergreen, tuft-forming, perennial grass. H 20in (50cm), S 1–1½ft (30–45cm). Has rich green leaves, glaucous beneath, and produces compact panicles of purple spikelets in spring. Z5–9

SETARIA

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
S. macrostachya (Italian millet) illus. p.318.
S. palmifolia (Palm grass). Upright to spreading, dense, clump-forming perennial grass. H 6–10ft (2–3m), S 3–6ft (1–2m). Has elliptic-lance-shaped, longitudinally pleated leaves, to 1½ft (45cm) long. Bears arching, narrow stems with bottlebrushlike spikes of green to beige flowers in late summer. Z10–11

Setcreasea purpurea. See *Tradescantia pallida* 'Purpurea'.

SHEPHERDIA

ELAEAGNACEAE

Genus of deciduous or evergreen shrubs or small trees, grown for their foliage and fruits. Separate male and female plants are needed in order to obtain fruits. Fully hardy. Requires sun and well-drained soil. Propagate by softwood cuttings in summer or by seed in fall.
S. argentea (Buffalo berry). Deciduous, bushy, often treelike shrub. H and S 12ft (4m). Bears tiny, inconspicuous, yellow flowers amid oblong, silvery leaves in spring, followed by small, egg-shaped, bright red fruits. Z3–9

SHIBATAEA

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
S. kumasasa illus. p.287.

SHORTIA

DIAPENSIACEAE

Genus of evergreen, spring-flowering perennials with leaves that often turn red in fall–winter. Fully hardy, but buds may be frosted in areas without snow cover. Grow best in areas with cool, damp summers. Needs shade or partial shade and humus-rich, leafy, moist but well-drained, acidic soil. Propagate by runners in summer or by seed when available.
S. galacifolia (Oconee bells) illus. p.349.
S. soldanelloides illus. p.352.
var. *ilicifolia* is an evergreen, mat-forming perennial. H 2–4in (5–10cm), S 4–6in (10–15cm). Has rounded, toothed leaves. In late spring, each flower stem bears 4–6 small, pendent, bell-shaped flowers with fringed edges and rose-pink centers shading to white. Flowers of **var. *magna*** are rose-pink throughout. Z4–8
***S. uniflora* 'Grandiflora'.** Vigorous, evergreen, mat-forming perennial with a few rooted runners. H 3in (8cm), S 8in (20cm). Leaves are rounded, toothed, leathery, and glossy. Flower stems bear cup-shaped, white-pink flowers, 2in (5cm) across, with serrated petals, in spring. Z4–8

SIDALCEA

MALVACEAE

Genus of summer-flowering annuals and perennials, grown for their hollyhocklike flowers. Fully hardy. Requires sun and well-drained soil. Propagate by division in spring.
***S.* 'Elsie Heugh'.** Upright perennial. H 3ft (90cm), S 1½ft (45cm). Has rounded basal leaves and lobed stem leaves. In early and midsummer, bears racemes of funnel-shaped, mauve-pink flowers with fringed petals. Z5–7
***S.* 'Loveliness'.** Upright perennial. H 3ft (1m), S 1½ft (45cm). Has buttercuplike, divided leaves with narrowly oblong segments and racemes of shallowly cup-shaped, shell-pink flowers, in summer. Z5–7
***S.* 'Oberon'** illus. p.233.
***S.* 'Puck'.** Upright perennial. H 2ft (60cm), S 1½ft (45cm). Has buttercuplike, divided leaves with narrowly oblong segments. In summer, bears racemes of shallowly cup-shaped, deep pink flowers. Z4–7
***S.* 'Sussex Beauty'.** Upright perennial. H 4ft (1.2m), S 1½ft (45cm). Has buttercuplike, divided leaves, with narrowly oblong segments, and, in summer, shallowly cup-shaped, deep rose-pink flowers. Z5–7
***S.* 'William Smith'.** Erect perennial. H 3ft (90cm), S 1½ft (45cm). Has rounded basal leaves and deeply lobed stem leaves. In summer, bears dense racemes of deep rose-pink flowers, tinted salmon-pink. May need staking. Z5–7

SIDERITIS

LAMIACEAE/LABIATAE

Genus of annuals, perennials, and evergreen subshrubs and shrubs, grown mainly for their foliage. Frost hardy to frost tender. Needs full light and well-drained soil. Water containerized plants moderately, less when temperatures are low. Remove spent flower spikes after flowering. Propagate by seed in spring or by semiripe cuttings in summer.
S. candicans. Evergreen, erect, well-branched shrub. H to 2½ft (75cm), S to 2ft (60cm). Lance-shaped to narrowly ovate or triangular leaves bear dense, white wool. Produces leafy, terminal spikes of tubular, pale yellow- and-light-brown or orange-red flowers in summer. Z9–11

SILENE

Campion, Catchfly

CARYOPHYLLACEAE

Genus of annuals, biennials and perennials, some of which are evergreen, grown for their abundant, 5-petaled flowers. Fully to half hardy. Needs sun and fertile, well-drained soil. Propagate by softwood cuttings in spring or by seed in spring or early fall.
S. acaulis (Moss campion) illus. p.352.
S. alpestris, syn. *Heliosperma alpestre*, illus. p.359.
***S. armeria* 'Electra'.** Moderately fast-growing, erect annual. H 1ft (30cm), S 6in (15cm). Has ovate, grayish-green leaves. Heads of 5-petaled, bright rose-pink flowers are produced in summer and early fall. Z5–8
S. coeli-rosa, syn. *Agrostemma coeli-rosa, Lychnis coeli-rosa, Viscaria elegans*, illus. p.303. **'Blue Angel'** is an erect, slender, hairless annual. H to 20in (50cm), S to 6in (15cm). Has oblong to lance-shaped, gray-green leaves. In summer, bears clusters of lavender-blue flowers with deeply notched petals and prominently toothed calyces. Good for cut flowers. Z3–10
S. elisabethae. Basal-rosetted perennial. H 4in (10cm), S 8in (20cm). Has rosettes of strap-shaped, mid-green leaves. In summer, stems bear large, often solitary, deep rose-red flowers with green centers and long-clawed petals. Good for a rock garden. Z6–9
S. hookeri. Short-lived, trailing, prostrate, late summer-deciduous perennial with a long, slender tap root. H 2in (5cm), S 8in (20cm). Slender stems bear ovate, gray leaves and, in late summer, soft pink, salmon or orange flowers, deeply cleft to base. Z5–8
***S. maritima* 'Flore Pleno'.** See *S. uniflora* 'Robin Whitebreast'.
S. pendula (Nodding catchfly). Moderately fast-growing, bushy annual. H and S 6–8in (15–20cm). Has ovate, hairy, mid-green leaves and, in summer–early fall, clusters of light pink flowers. Z4–8
S. schafta illus. p.346.
***S. uniflora* 'Robin Whitebreast'**, syn. *S. maritima* 'Flore Pleno', *S.u.* 'Flore Pleno', *S. vulgaris* subsp. *maritima* 'Flore Pleno' (Double sea campion). Lax perennial with deep, wandering roots. H and S 8in (20cm). Has lance-shaped, gray-green leaves. Bears pomponlike, double, white flowers on branched stems in summer. Z3–8
***S. vulgaris* subsp. *maritima* 'Flore Pleno'.** See *S. uniflora* 'Robin Whitebreast'.

SILPHIUM

ASTERACEAE/COMPOSITAE

Genus of herbaceous perennials, grown for their summer flowers. Fully hardy. Does best in sun or partial shade and in moist but well-drained soil. Excellent for naturalizing in a wild or woodland garden. Propagate by division in spring or by seed when fresh, in fall.
S. laciniatum (Compass plant). Clump-forming perennial. H 6ft (2m), S 2ft (60cm). Mid-green leaves, composed of opposite pairs of oblong to lance-shaped leaflets, face north and south wherever the plant is grown, hence the common name. Bears clusters of slightly pendent, daisylike, yellow flower heads in late summer. Z3–9

SILYBUM

ASTERACEAE/COMPOSITAE

Genus of thistlelike annuals or biennials, grown for their spectacular foliage. Fully hardy. Grow in sun and in any well-drained soil. Propagate by seed in late spring or early summer. Prone to slug and snail damage.
S. marianum illus. p.304.

Sinarundinaria jaunsarensis.
See *Yushania anceps*.
Sinarundinaria murieliae.
See *Fargesia murieliae*.
Sinarundinaria nitida.
See *Fargesia nitida*.

SINNINGIA

GESNERIACEAE

Genus of usually summer-flowering, tuberous perennials and deciduous or evergreen, low-growing shrubs with showy flowers. Frost hardy to frost tender. Grow in bright light, but not direct sun. Prefers a humid atmosphere and moist but not waterlogged, peaty soil. When leaves die down after flowering, allow tubers to dry out; then store in a frost-free area. Propagate in spring by seed, or in late spring or summer by stem cuttings or by dividing tubers into sections, each with a young shoot.
***S.* 'Etoile de Feu'.** Short-stemmed, rosetted, tuberous perennial. H 1ft (30cm), S 16in (40cm) or more. Has ovate, velvety leaves, 8–9½in (20–24cm) long. Upright, trumpet-shaped, carmine-red flowers are borne in summer. Z12 (min. 59°F/15°C)
***S.* 'Mont Blanc'.** Short-stemmed, rosetted, tuberous perennial. H 1ft (30cm), S 16in (40cm) or more. Ovate, velvety, mid-green leaves are 8–9½in (20–24cm) long. In summer, bears upright, trumpet-shaped, pure white flowers. Z12 (min. 59°F/15°C)
***S.* 'Red Flicker'.** Short-stemmed, tuberous perennial. H to 1ft (30cm), S 1½ft (45cm). Has rosettes of ovate, velvety leaves, to 8in

(20cm) long. Fleshy, nodding, funnel-shaped, pinkish-red flowers, pouched on lower sides, are borne in summer. Z12 (min. 59°F/15°C)
S. speciosa, syn. *Gloxinia speciosa* (Gloxinia). Short-stemmed, rosetted, tuberous perennial. H and S to 1ft (30cm). Ovate, velvety, green leaves are 8in (20cm) long. Nodding, funnel-shaped, fleshy, violet, red or white flowers, to 2in (5cm) long and pouched on lower sides, are produced in summer. A parent of many named hybrids, of which a selection is included above and below. Z12 (min. 59°F/15°C)
***S.* 'Switzerland'** illus. p.470.
S. tubiflora, syn. *Gloxinia tubiflora*. Compact, clump-forming, tuberous perennial. H and S 20in (50cm). Has softly white-hairy, dark green leaves, to 8in (20cm) long. Bears tall racemes of narrowly tubular, softly hairy, scented, white flowers, to 4in (10cm) long, in summer. Z9–11
***S.* 'Waterloo'.** Short-stemmed, rosetted, tuberous perennial. H 1ft (30cm), S 16in (40cm) or more. Has ovate, velvety leaves, 8–9½in (20–24cm) long. Upright, trumpet-shaped, bright scarlet flowers are borne in summer. Z12 (min. 59°F/15°C)

***Sinocalycanthus*.** See *Calycanthus*.

SINOCRASSULA

CRASSULACEAE

Genus of dwarf rosette-forming succulents, grown for their marked leaves. Frost tender. Grow in full sun or partial soil and well-drained soil. Propagate from single leaves left on the soil surface, which sprout roots readily when in growth.
***S. yunnanense*.** Evergreen perennial succulent. H 4in (10cm), S 8in (20cm). Forms dense rosettes, to 1½in (3.5cm) across, of 50 or more narrow, cylindrical, pointed, dark reddish-purple leaves with sparse white hairs. Eventually produces a 4in (10cm) high terminal, leafy stem with heads of small, straw-yellow flowers. Individual rosettes die after flowering. Z11–12 (min. 50°F/10°C)

SINOFRANCHETIA

LARDIZABALACEAE

Genus of one species of deciduous, twining climber, grown for its handsome leaves. Suitable for covering buildings and growing up large trees. Male and female flowers are produced on separate plants. Frost hardy. Grow in partial shade and in any well-drained soil. Propagate by semiripe cuttings in summer.
***S. chinensis*.** Deciduous, twining climber. H to 50ft (15m). Mid- to dark green leaves have 3 oblong to ovate leaflets, 2–6in (5–15cm) long. In late spring, bears small, white flowers in pendent racemes, to 4in (10cm) long. Pale purple berries, containing many seeds, follow in summer. Z5–9

SINOJACKIA

STYRACACEAE

Genus of deciduous shrubs and small trees, grown for their flowers. Fully hardy. Requires a sheltered position in sun or partial shade and fertile, humus-rich, moist, acidic soil. Propagate by softwood cuttings in summer.
***S. rehderiana*.** Deciduous, bushy shrub or spreading tree. H and S 20ft (6m). Nodding, saucer-shaped, white flowers, each with a central cluster of yellow anthers, are borne in late spring and early summer. Ovate leaves are dark green and glossy. Z7–10

SINOPODOPHYLLUM

BERBERIDACEAE

Genus of a single spring-flowering rhizomatous perennial species, grown for its flowers, often marbled foliage and large red fruit. Fully hardy. Needs partial shade and moist, humus-rich soil. Propagate by division of the rhizome or seed sown in fall. All parts toxic if eaten.
S. hexandrum, syn. *Podophyllum hexandrum*, *P. emodii* (Himalayan May apple), illus. p.255.

SINOWILSONIA

HAMAMELIDACEAE

Genus of one species of deciduous tree, grown for its foliage and catkins. Fully hardy. Requires sun or partial shade and fertile, moist but well-drained soil. Propagate by seed in fall.
***S. henryi*.** Deciduous, spreading, sometimes shrubby tree. H and S 25ft (8m). Has broadly ovate to elliptic, tapered, toothed, bright green leaves, and long, pendent, green catkins in late spring. Z7–10

***Siphonosmanthus delavayi*.** See *Osmanthus delavayi*.

SISYRINCHIUM

IRIDACEAE

Genus of annuals and rhizomatous perennials, some of which are semievergreen, grown for their foliage and flowers. Fully to half hardy. Prefers sun, but tolerates partial shade, and well-drained or moist soil. Propagate by division in early spring or by seed in spring or fall.
***S. angustifolium*.** See *S. graminoides*.
S. bellum of gardens. See *S. idahoense*.
***S. bermudiana*.** See *S. graminoides*.
***S. brachypus*.** See *S. californicum*.
S. californicum, syn. *S. brachypus* (Golden-eyed grass). Semi-evergreen, upright perennial. H 1–2ft (30–60cm), S 1ft (30cm). Has grasslike tufts of basal, light green leaves. In spring–summer, produces flattish, bright yellow flowers, with slightly darker veins, on winged stems. Outer leaves may die off and turn black in fall. Dwarf forms are known as *S. brachypus*. Prefers moist soil. Z8–10
***S. douglasii*.** See *Olsynium douglasii*.
***S.* 'E.K. Balls'** illus. p.342.
S. graminoides, syn. *S. angustifolium*, *S. bermudiana*. Semievergreen, erect perennial. H to 1ft (30cm), S 3in (8cm). Has tufts of grasslike leaves. Small, irislike, pale to dark purplish-blue flowers, with yellow bases, are borne in terminal clusters in late spring–early summer. Z5–8
***S. grandiflorum*.** See *Olsynium douglasii*.
S. idahoense, syn. *S. bellum* of gardens, illus. p.369.
***S. odoratissimum*.** See *Olsynium biflorum*.
***S. palmifolium*.** Semievergreen, upright perennial. H 1½ft (45cm), S 1ft (30cm). Produces a fan of narrowly sword-shaped, mid-green leaves. In summer, bears dense spikes of widely funnel-shaped, golden-yellow flowers. Z4–11
S. striatum illus. p.274. **'Aunt May'** (syn. *S.s.* 'Variegatum') is a semievergreen, upright perennial. H 18–24in (45–60cm), S 1ft (30cm). Has tufts of long, narrow, cream-striped, grayish-green leaves. Bears slender spikes of trumpet-shaped, purple-striped, straw-yellow flowers in summer.
'Variegatum' see *S.s.* 'Aunt May'. Z5–9

SKIMMIA

RUTACEAE

Genus of evergreen shrubs and trees, grown for their spring flowers, aromatic foliage, and their fruits. Except with *S. japonica* subsp. *reevesiana*, separate male and female plants are needed in order to obtain fruits. Fully hardy. Requires shade or partial shade and fertile, moist soil. Poor soil or too much sun may cause chlorosis. Propagate by semiripe cuttings in late summer or by seed in fall. ⓘ The fruits may cause mild stomach upset if ingested.
S.* x *foremanii of gardens. See *S. japonica* 'Veitchii'.
S. japonica illus. p.164. **'Fructo Albo'** (female) illus. p.163. **'Nymans'** is a dense, spreading female shrub. H 3ft (1m), S 6ft (2m). Has inversely lance-shaped, slightly aromatic, dark green leaves. In mid- to late spring, bears dense clusters of fragrant white flowers, sometimes tinged pink or red, often opening from red buds, followed by spherical red fruits. **subsp. *reevesiana* 'Robert Fortune'** (syn. *S. reevesiana*; hermaphrodite) illus. p.164. **'Rubella'** (male) illus. p.164. **'Veitchii'** (syn. *S.* x *foremanii* of gardens), H and S 5ft (1.5m), is a female clone, with broadly ovate, rich green leaves and dense clusters of small, star-shaped, white flowers, followed by large, bright red fruits. Z6–8
***S. reevesiana*.** See *S. japonica* subsp. *reevesiana* 'Robert Fortune'.

Smilacena. See *Maianthemum*.

SMILAX

SMILACACEAE/LILIACEAE

Genus of deciduous or evergreen, woody-stemmed or herbaceous, scrambling climbers with tubers or rhizomes. Male and female flowers are borne on separate plants. Frost hardy to frost tender. Grow in any well-drained soil, in sun or partial shade. Propagate by division or seed in spring or by semiripe cuttings in summer.
***S. china*.** Deciduous, woody-based, scrambling climber with scandent, sometimes spiny stems. H to 15ft (5m). Has broadly ovate to rounded leaves, and bears umbels of yellow-green flowers in spring. Tiny, red berries follow in fall. Z5–9

SMITHIANTHA

Temple bells

GESNERIACEAE

Genus of bushy, erect perennials with tuberlike rhizomes, grown for their flowers and foliage. Frost tender. Grow in humus-rich, well-drained soil and in bright light, out of direct sun. Reduce watering after flowering and water sparingly in winter. Propagate by division of rhizomes in early spring.
S. cinnabarina (Temple bells). Robust, erect, rhizomatous perennial. H and S to 2ft (60cm). Broadly ovate to almost rounded, toothed leaves, to 6in (15cm) long, are dark green with dark red hairs. Bell-shaped, brick-red flowers, lined with pale yellow, are produced in summer–fall. Z11–12 (min. 50°F/10°C)
***S.* 'Orange King'** illus. p.471.
***S. zebrina*.** Bushy, rhizomatous perennial with velvety-haired stems. H and S to 3ft (1m). Ovate, toothed, hairy leaves, to 7in (18cm) long, are deep green, marked with reddish-brown. In summer, produces tubular flowers, scarlet above, yellow below, spotted red inside, and with orange-yellow lobes. Z11–12 (min. 50°F/10°C)

SMYRNIUM

APIACEAE/UMBELLIFERAE

Genus of biennials or short-lived perennials, grown for their flowers. Fully hardy. Grow in sun and in fertile, well-drained soil. Propagate by seed sown outdoors in fall or spring.
S. perfoliatum illus. p.321.

SOLANDRA

SOLANACEAE

Genus of evergreen, woody-stemmed, scrambling climbers, grown for their large, trumpet-shaped flowers. Frost tender. Needs full light and fertile, well-drained soil. Water freely in full growth, sparingly in cold weather. Tie to supports. Thin out crowded stems after flowering. Propagate by semiripe cuttings in summer.
S. maxima, syn. *S. grandiflora* of gardens (Copa de oro, Golden-chalice vine), illus. p.464.

SOLANUM

SOLANACEAE

Genus of annuals, biennials, herbaceous perennials, and evergreen, semievergreen, or deciduous subshrubs, shrubs (occasionally scandent), and woody-stemmed, scrambling or leaf-stalk climbers, grown for their flowers and ornamental fruits. Fully hardy to frost tender. Requires full sun and fertile,well-drained soil. Water regularly when in growth, but sparingly in winter. Support scrambling climbers. Thin out and spur back crowded growth of climbers in spring. Propagate by seed in spring or by semiripe cuttings in summer. Red spider mite, whitefly, and aphids may cause problems. ⓘ All parts of most species, especially the fruits of *S. capsicastrum* and *S. pseudocapsicum*, can cause severe discomfort if ingested.
S. betaceum, syn. *Cyphomandra betacea*, *C. crassicaulis* (Tree tomato), illus. p.456.
S. capsicastrum (Winter cherry). Fairly slow-growing, evergreen, bushy subshrub, grown as an annual. H and S 1–1½ft (30–45cm). Has lance-shaped, deep green leaves. In summer, produces small, star-shaped, white flowers, followed by egg-shaped, pointed, orange-red or scarlet

fruits, at least ½in (1cm) in diameter, which are at their best in winter. Z10–12 (min. 41°F/5°C)
***S. crispum* 'Glasnevin'** illus. p.204.
***S. jasminoides*.** See *S. laxum*.
S. laxum, syn. *S. jasminoides* (Potato vine). Semievergreen, woody-stemmed, scrambling climber. H to 20ft (6m). Ovate to lance-shaped leaves may be lobed or have leaflets at base. Small, 5-petaled, pale gray-blue flowers are borne in summer–fall, followed by tiny, black berries. Z7–10. **'Album'** illus. p.195.
S. pseudocapsicum (Jerusalem cherry). Fairly slow-growing, evergreen, bushy shrub, usually grown as an annual. H and S to 4ft (1.2m). Has ovate or lance-shaped, bright green leaves. Small, star-shaped, white flowers are borne in summer and are followed by spherical, scarlet fruits. Z10–12 (min. 41°F/5°C). Has several smaller selections: **'Balloon'** illus. p.327; **'Fancy'**, H 1ft (30cm), with scarlet fruits; **'Joker'** has yellow fruit turning orange and red; **'Red Giant'** has large orange-red fruit, to 1in (2.5cm) across; and **'Snowfire'**, H 1ft (30cm), with white fruits that later turn red.
***S. rantonnei*.** See *Lycianthes rantonnii*.
***S. rantonnetii*.** See *Lycianthes rantonnetii*.
S. seaforthianum (Italian jasmine) illus. p.463.
S. wendlandii illus. p.463.

SOLDANELLA

Snowbell

PRIMULACEAE

Genus of evergreen perennials, grown for their early spring flowers. Suitable for rock gardens, troughs, and alpine houses. Fully hardy, but flower buds are set in fall and may be destroyed by frost in areas where there is no snow cover. Needs partial shade and humus-rich, well-drained, peaty soil. Propagate by seed in spring or by division in late summer. Slugs may cause damage to flower buds.
S. alpina (Alpine snowbell) illus. p.354.
S. minima (Least snowbell). Evergreen, prostrate perennial. H 1in (2.5cm), S 4in (10cm). Forms a mat of minute, rounded leaves on soil surface. In early spring, produces solitary almost stemless, bell-shaped, pale lavender-blue or white flowers with fringed petals. Z4–7
S. montana (Mountain tassel). Evergreen, mound-forming perennial. H 4in (10cm), S 6in (15cm). In early spring, tall flower stems bear long, pendent, bell-shaped, lavender-blue flowers with fringed mouths. Leaves are rounded and leathery. Z4–7
S. villosa illus. p.354.

SOLEIROLIA

Baby's tears, Mind-your-own-business, Mother of thousands

URTICACEAE

Genus of one species of usually evergreen, prostrate perennial that forms a dense carpet of foliage. Frost hardy, although leaves are killed by winter frost. Recovers to grow vigorously again in spring. Tolerates sun or shade, and prefers moist soil. Propagate by division from spring to midsummer.
S. soleirolii, syn. *Helxine soleirolii*, illus. p.283.

SOLENOSTEMON

SYN. COLEUS

Flame nettle, Painted nettle

LAMIACEAE/LABIATAE

Genus of evergreen, bushy, subshrubby perennials, grown for their colorful leaves and flowers. Excellent as potted plants. Frost tender. Grow in sun or partial shade and in fertile, well-drained soil, in a sheltered site. Water freely in summer, much less at other times. Pinch out growing shoots of young plants to encourage a bushy habit. Propagate by seed sown under glass in spring or by softwood cuttings in spring or summer. Mealy bugs and whitefly may cause problems.
***S. blumei* var. *verschaffeltii*.** See *S. scutellarioides*.
***S.* 'Chocolate Mint'** illus. p.311.
S. scutellarioides, syn. *Coleus scutellarioides*, *Plectranthus scutellarioides*, *S. blumei* var. *verschaffeltii*. Fast-growing, bushy perennial, grown as an annual. H to 1½ft (45cm), S 1ft (30cm) or more. Broadly to narrowly ovate, toothed leaves are a mixture of colors, including pink, red, green, or yellow. Flower spikes should be removed. Z10–12 (min. 39°F/4°C).
'Inky Fingers' illus. p.310. **Wizard Series**, H to 8in (20cm), is compact and bushy, with small, strongly colored leaves, to 2in (5cm) long.
***S. thyrsoideus*.** See *Plectranthus thyrsoideus*.

SOLIDAGO

Golden rod

ASTERACEAE/COMPOSITAE

Genus of summer- and fall-flowering, woody-based perennials, some species of which are vigorous, coarse plants that tend to crowd out others in borders. Best in a wild garden, although *S. virgaurea* subsp. *minuta* is suitable for a rock garden, trough, or alpine house. Fully hardy. Most tolerate sun or shade and any well-drained soil. Propagate by division in spring. Occasionally self-seeds.
***S.* 'Goldenmosa'** illus. p.251.
***S.* 'Golden Wings'.** Upright perennial. H 5ft (1.5m), S 3ft (1m). Has lance-shaped, toothed, hairy, mid-green leaves. Produces large, feathery panicles of small, bright yellow flower heads in late summer and early fall. Z3–8
***S.* 'Laurin'.** Compact perennial. H 2–2½ft (60–75cm), S 1½ft (45cm). Has mid-green leaves and bears spikes of deep yellow flowers in late summer. Z3–8
S.* x *luteus, syn. x *Solidaster hybridus*, x *S. luteus*, illus. p.275.
S. virgaurea* subsp. *minuta, syn. *S.v.* subsp. *alpestris*. Mound-forming perennial. H and S 4in (10cm). Has small, leathery, lance-shaped, toothed, mid-green leaves. From late summer to fall, bears neat spikes of small, yellow flower heads. Needs shade and moist soil. Z3–8

x ***Solidaster hybridus*.** See *Solidago* x *hybridus*.
x ***Solidaster luteus*.** See *Solidago* x *luteus*.

SOLLYA

Bluebell creeper

PITTOSPORACEAE

Genus of evergreen, woody-based, twining climbers, grown for their attractive flowers. Frost hardy. Grow in sun and well-drained soil. Propagate by seed in spring, or by softwood or greenwood cuttings in summer.
S. heterophylla illus. p.194.

SONERILA

MELASTOMATACEAE

Genus of evergreen, bushy perennials and shrubs, grown for their foliage and flowers. Frost tender. Prefers a humid atmosphere in partial shade and peaty soil. Propagate by tip cuttings in spring.
***S. margaritacea*.** Evergreen, bushy, semi-prostrate perennial. H and S 8–10in (20–25cm). Red stems have ovate, dark green leaves, 2–3in (5–8cm) long, reddish below, silver-patterned above. Bears racemes of 3-petaled, rose-pink flowers in summer. Z12 (min. 19°C/66°F). **'Argentea'** has more silvery leaves with green veins; **'Hendersonii'** is more compact with white-spotted leaves.

SOPHORA

Kowhai

PAPILIONACEAE/LEGUMINOSAE

Genus of herbaceous perennnials and deciduous or evergreen trees and shrubs, grown for their habit, foliage and pealike flowers. Fully to frost hardy. Needs full sun (*S. microphylla* and *S. tetraptera* are best grown against a warm, sunny wall) and fertile, well-drained soil. Propagate by seed in fall; semievergreens may be raised from cuttings in summer.
S. davidii, syn. *S. viciifolia*, illus. p.138.
***S. japonica*.** See *Styphnolobium japonicum*.
***S.* Sun King ('Hilsop').** Semievergreen, bushy tree. H and S 10ft (3m). Dark green leaves are composed of numerous tiny, oblong leaflets. Produces long-lasting, pealike, dark yellow flowers in late winter and early spring. Z7–11
S. tetraptera illus. p.84.
***S. viciifolia*.** See *S. davidii*.

x ***Sophrolaeliocattleya* Hazel Boyd 'Apricot Glow'.** See x *Cattlianthe* Hazel Boyd gx 'Apricot Glow'.

SORBARIA

ROSACEAE

Genus of deciduous, summer-flowering shrubs, grown for their foliage and large panicles of small, white flowers. Suitable for a large border, or a wild or woodland garden. Fully hardy. Prefers sun and deep, fertile, moist soil. In winter, cut out some older stems on mature plants and prune back remaining shoots to growing points. Remove suckers at base to prevent plants spreading too widely. Propagate by softwood cuttings in summer, division in fall, or by root cuttings in late winter.
***S. aitchisonii*.** See *S. tomentosa* var. *angustifolia*.
***S. arborea*.** See *S. kirilowii*.
S. kirilowii, syn. *S. arborea*, *Spiraea arborea*, illus. p.128.
S. sorbifolia, syn. *Spiraea sorbifolia*, illus. p.129. **'Sem'** is a compact shrub. H and S 5ft (1.5m). Has pinkish red young leaves, that change to yellow-green with bronze tips, then dark green, and finally turn reddish in fall. Flowers are produced from mid- to late summer. Z2–7
S. tomentosa* var. *angustifolia, syn. *S. aitchisonii*, *Spiraea aitchisonii*. Deciduous, arching shrub. H and S 10ft (3m). Shoots are red when young. Leaves have 11–23 narrowly lance-shaped, taper-pointed, dark green leaflets. Upright panicles of star-shaped, white flowers are produced from mid- to late summer. Z2–7

SORBUS

ROSACEAE

Genus of deciduous trees and shrubs, grown for their foliage, corymbs of small, 5-petaled flowers, attractive fruits and, in some species, fall color. Leaves may be whole or divided into leaflets. Fully to frost hardy. Needs sun or partial shade and fertile, well-drained but moist soil. Species with leaves composed of leaflets do not grow well in very dry soil. Propagate by softwood cuttings or budding in summer, by seed in fall, or by grafting in winter. Susceptible to fireblight. ⓘ Raw fruit may cause mild stomach upset if ingested.
S. alnifolia (orean mountain ash). Deciduous, conical, then spreading tree. H 50ft (15m), S 25ft (8m). Ovate to lance-shaped, toothed, dark green leaves turn orange and red in fall. Bears small, white flowers in mid-spring, followed by spherical, deep pink to red berries. Z3–7
S. aria (Whitebeam). Deciduous, spreading tree. H 50ft (15m), S 30ft (10m). Ovate, toothed leaves are silver-gray when young, maturing to dark green above, white-felted beneath. Bears small, white flowers in late spring, followed by ovoid to spherical, brown-speckled, deep red berries. H6. **'Chrysophylla'**, H 30ft (10m), S 22ft (7m), has golden-yellow young leaves. **'Decaisneana'** see *S.a.* 'Majestica'. **'Lutescens'** (illus. p.91) is compact, with silvery-gray, later gray-green foliage and orange-red berries. **'Majestica'** (syn. *S.a.* 'Decaisneana') has larger leaves, white-haired when young.
S. aucuparia (Mountain ash, Rowan; illus. p.91). Deciduous, spreading tree. H 50ft (15m), S 22ft (7m). Pinnate leaves have up to 17 oblong-lance-shaped, mid-green leaflets that turn red or yellow in fall. Bears white flowers in spring, then spherical, orange-red berries. Z3–7.
'Fastigiata' (syn. *S. scopulina* of gardens), H 25ft (8m), S 15ft (5m), is conical, with upright branches, dark green leaves, and dark red berries. **'Fructu Luteo'** see var. *xanthocarpa*. **'Sheerwater Seedling'**, S 12ft (4m), has a narrow, upright habit.
var. *xanthocarpa* (syn. *S.a.* 'Fructu Luteo'), H and S 25ft (8m), is spreading, with orange-yellow berries.
***S.* Autumn Spire ('Flanrock').** Compact, columnar tree. H 12–15ft (4–5m), S 3–5ft (1–1.5m). Pinnate leaves with 15–21 narrowly oblong, dark green leaflets, turn orange and purplish-red in fall. Bears white flowers in late spring, followed by

profuse clusters of yellow-orange berries with red eyes. Good for small gardens. Z4–8
S. cashmiriana (illus. p.91). Deciduous, spreading tree or shrub. H 25ft (8m), S 22ft (7m). Pinnate leaves have 17–21, lance-shaped, rich green leaflets. In late spring, produces pale pink flowers, followed by spherical, white berries. Z4–8
S. commixta, syn. *S. discolor* of gardens (illus. p.91). Deciduous, compact, broadly conical tree or shrub. H 30ft (10m), S 22ft (7m). Pinnate leaves have 13–17 elliptic to lance-shaped, dark green leaflets, turning orange-red or purple in fall. White flowers in spring are followed by spherical, orange–red or red berries. Z4–8.
'Embley', H 40ft (12m), S 28ft (9m), has steeply ascending branches, bright red leaves in late fall, and fruits profusely.
'Olympic Flame' see *S. ulleungensis* 'Olympic Flame'.
***S.* 'Copper Kettle'.** Deciduous, small, broadly conical tree. H 20–25ft (6–8m), S 4–6m (12–20ft). Pinnate leaves have 13–19 elliptic to lance-shaped, dark green leaflets, turning orange and red in fall. In late spring, bears creamy-white flowers, then long-lasting, coppery-yellow berries. Z6–9
S. cuspidata. See *S. vestita*.
S. discolor of gardens. See *S. commixta*.
***S.* 'Eastern Promise'.** Deciduous, small, upright tree, forming a loose ovate-shaped head. H and S 20–25ft (6–8m). Pinnate leaves have 17–25 elliptic to lance-shaped, glossy, dark green leaflets, turning purplish red in fall. In late spring, bears abundant, creamy-white flowers, then rose-pink berries, maturing to deep salmon-pink. Z6–9
***S. folgneri* 'Emiel'.** Deciduous, arching tree. H and S 25ft (8m). Slightly pendent branches bear simple, narrowly ovate, dark green leaves, white beneath, with striking orange and red fall color. White flowers, in late spring, are followed by pendent clusters of ovoid, dark red berries. Z6–9
S. forrestii (illus. p.91). Deciduous, spreading tree. H 20ft (6m), S 12ft (4m). Pinnate leaves have up to 19 elliptic-oblong, dark blue-green, toothed leaflets. Bears creamy-white flowers in spring, followed by spherical, fleshy, white berries, tinted crimson at the bases. Z4–8
S. glabriuscula, syn. *S. hupehensis* of gardens (Hubei rowan). Deciduous, broadly columnar tree. H and S to 25ft (8m). Pinnate leaves have up to 15 ovate, blue-green leaflets, turning red in fall. Bears pyramidal corymbs of white flowers in late spring, followed by spherical, pink-tinged, white fruits. Z6–9
***S. hemsleyi* 'John Bond'.** Deciduous, neat, narrowly conical tree. H 22–30ft (7–10m), S 20ft (6m). Smooth, reddish brown young branches have conspicuous, white lenticels, and simple, ovate to lance-shaped, toothed, dark gray-green leaves, In late spring–early summer, bears creamy-white flowers, followed by roundish, russet berries. Good for small gardens. Z6–9
S. hupehensis of gardens. See *S. glabriuscula*.
***S. hupehensis* var. *obtusa*.** See *S. pseudohupehensis*. **'Pink Pagoda'** see *S. pseudohupehensis*. **'Rosea'** see *S. pseudohupehensis*.
***S. hybrida* 'Gibbsii'.** Deciduous, compact tree. H to 22ft (7m), S 12ft (4m). Broadly ovate, mid-green leaves, with gray undersides, are more deeply lobed toward the base. White flowers in late spring are followed by striking clusters of speckled, bright red berries. Z4–8
S. intermedia (Swedish whitebeam; illus. p.91). Deciduous, broad-headed, dense tree. H and S 40ft (12m). Has broadly ovate, toothed, dark green leaves. Bears small, white flowers in late spring, followed by ovoid-oblong, bright red berries. Z4–8
***S.* 'Joseph Rock'.** Deciduous, upright tree. H 30ft (10m), S 22ft (7m). Pinnate leaves comprise up to 21 narrowly oblong, sharply toothed, bright green leaflets, that turn orange, red, and purple in fall. White flowers in late spring are followed by large clusters of spherical, pale yellow, later orange-yellow berries. Z4–8
***S.* 'Leonard Messel'.** Deciduous, small, slow-growing, tree, with a dense, ovate crown. H 25–40ft (8–12m), S 20–26ft (6–8m). Stout, upright branches bear pinnate leaves composed of 9–11 oblong, blue-green leaflets, turning rich shades of orange, red, and purple in fall. In late spring, bears white flowers followed by pendent clusters of pink berries. Z6–9
S. megalocarpa (illus. p.91). Deciduous, spreading tree or shrub with stout branches. H to 22ft (7m), S 4m (13ft). Oval, finely toothed, dark green leaves, are reddish when young and in fall. Bears pungent, creamy-white flowers in spring, followed by ovoid, brown-speckled berries. Z5–7
***S.* 'Mitchellii'.** See *S. thibetica* 'John Mitchell'.
S. munda, syn. *S. prattii* of gardens. Deciduous, spreading tree. H and S 20ft (6m). Pinnate leaves have 25–31 oblong, sharply toothed, dark green leaflets. Small, white flowers in late spring, are followed by spherical, green fruits, ripening white. Z5–7
***S.* 'Olympic Flame'.** See *S. ulleungensis* 'Olympic Flame'.
S. prattii of gardens. See *S. munda*.
S. pseudohupehensis, syn. *S. hupehensis* var. *obtusa, S.h.* 'Pink Pagoda', *S.h.* 'Rosea', illus. p.73.
S. reducta illus. p.346.
***S. rosea* 'Rosiness'.** Deciduous shrub or small tree. H and S 10–12ft (3–4m). Has deep reddish-brown shoots and buds, and pinnate leaves with 15–19 narrowly ovate, deep green leaflets with reddish stalks, turning orange-red before falling. In late spring, bears pink flowers, then heavy clusters of spherical, pale pink berries, that darken later, often flecked crimson. Z5–7
S. sargentiana (Sargent's rowan; illus. p.91). Deciduous, sparsely branched, spreading tree. H and S 20ft (6m). Has stout shoots and large, pinnate leaves, with 9–14 oblong to lance-shaped, dark green leaflets, turning orange and red in fall. Small, white flowers in late spring are followed by spherical, orange berries. Z5–7
S. scalaris (illus. p.91). Deciduous, spreading, graceful tree. H and S 30ft (10m). Pinnate leaves, with 21–33 narrowly oblong, glossy, dark green leaflets, turn red and purple in fall. Flattened corymbs of small, white flowers in late spring are followed by spherical, red berries in large, dense clusters. Z5–7
S. scopulina of gardens. See *S. aucuparia* 'Fastigiata'.
S. thibetica. Deciduous, conical tree. H 70ft (20m), S 50ft (15m). Large, elliptic to rounded, sharply toothed, dark green leaves are densely white-hairy when young and remain so on undersides. In late spring and early summer, bears small, white flowers, followed by apple-shaped, speckled green berries, ripening brownish. Z4–7.
'John Mitchell' (syn. *S.* 'Mitchellii'; illus. p.91) has larger, broadly rounded leaves.
S.* x *thuringiaca. Deciduous, broadly conical, compact tree. H 40ft (12m), S 25ft (8m). Ovate to elliptic, deeply lobed, glossy, dark green leaves turn warm yellow-brown in fall. Small, white flowers in late spring, are followed by rounded, bright red berries. Z3–6. **'Fastigiata'** is very compact, with upright branches and a broad, ovate, dense crown.
***S. ulleungensis* 'Olympic Flame'**, syn. *S. commixta* 'Olympic Flame', *S.* 'Olympic Flame'. Deciduous, neat, ovate-shaped tree. H 22–30ft (7–10m), S 15–22ft (5–7m). Has stout branches and elegant, pinnate, glossy dark green leaves, reliably turning brilliant orange and red in fall. In late spring, bears white flowers, then spherical, orange-red or red fruits. Z6–9
S. vestita, syn. *S. cuspidata*. Deciduous, broadly conical tree. H to 80ft (25m), S 30ft (10m). Very large, elliptic, sharply toothed leaves are white-hairy when young, glossy, dark green above when mature. Pink-stamened, white flowers, in late spring, are followed by spherical, brown-speckled, yellow-green berries. Z7–8
S. vilmorinii (illus. p.91). Deciduous, spreading, arching, elegant tree or large shrub. H and S 15ft (5m). Pinnate leaves have 21–29 glossy, dark green leaflets, turning orange- or bronze-red in fall. Bears white flowers in late spring, followed by spherical, dark red berries. Z6–8
***S.* 'Wisley Gold'.** Deciduous, small, upright tree, forming a dense, rounded head. H 20–25ft (6–8m), S 12–20ft (4–6m). Pinnate leaves composed of 11–15 ovate or oblong, toothed leaflets, turn reddish purple or orange-red in fall. In late spring, bears white flowers, followed by heavy bunches of long-lasting, golden-yellow berries. Z6–9

SPARAXIS

Harlequin flower

IRIDACEAE

Genus of spring- and early summer-flowering corms, grown for their very brightly colored flowers. Half hardy. Requires a sunny, well-drained site. Plant in fall. Dry off corms after flowering. Propagate by offsets in late summer or by seed in fall.
S. elegans, syn. *Streptanthera cuprea*, *S. elegans*. Spring-flowering corm. H 4–10in (10–25cm), S 3–5in (8–12cm). Has lance-shaped leaves in an erect, basal fan. Stem produces a loose spike of 1–5 flattish, orange or white blooms, each 1¼–1½in (3–4cm) across, and with a yellow center surrounded by a purple-black band. Z10–11
***S. fragrans* subsp. *grandiflora*.** See *S. grandiflora*.
S. grandiflora, syn. *S. fragrans* subsp. *grandiflora*. Spring-flowering corm. H 6–16in (15–40cm), S 3–5in (8–12cm). Has sword-shaped leaves in an erect, basal fan. Stem bears a loose spike of up to 5 flattish, yellow-tubed, deep purple flowers, each 1½–2in (4–5cm) across. Z10–11
S. grandiflora. See *S. fragrans* subsp. *grandiflora*.
S. tricolor illus. p.418.
S. variegata, syn. *Synnotia variegata*. Spring-flowering corm. H 4–14in (10–35cm), S 3–4in (8–10cm). Produces erect leaves in a basal fan. Flowers are long-tubed with upright, purple, upper petals and narrower, pale yellowish-purple, lower ones curving downward. Z10–11.
var. *metelerkampiae* has a branched stem, each branch producing a sparse spike of violet flowers, marked orange on each of the lower 3 petals.

SPARGANIUM

Bur reed

SPARGANIACEAE/TYPHACEAE

Genus of deciduous or semievergreen, perennial, marginal water plants, grown for their foliage. Fully hardy. Tolerates deep shade and cold water. Remove faded foliage and cut plants back regularly to control growth. Propagate by seed or division in spring.
S. erectum, syn. *S. ramosum* (Branched bur reed), illus. p.443.
S. ramosum. See *S. erectum*.

SPARRMANNIA

SYN. SPARMANNIA

African hemp

MALVACEAE/TILIACEAE

Genus of evergreen trees and shrubs, grown for their flowers and foliage. Frost tender. Prefers full light and fertile, well-drained soil. Water freely when in full growth, moderately at other times. Cut back stems after flowering to promote a more compact habit. Propagate by greenwood cuttings in late spring.
S. africana illus. p.453.

SPARTINA

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
***S. pectinata* 'Aureomarginata'**, syn. *S.p.* 'Aureovariegata', illus. p.289.

SPARTIUM

PAPILIONACEAE/LEGUMINOSAE

Genus of one species of deciduous, almost leafless shrub, grown for its green shoots and showy flowers. Fully hardy. Needs sun and not too rich, well-drained soil. To maintain a compact habit, trim in early spring. Propagate by seed in fall.
S. junceum (Spanish broom) illus. p.140.

SPATHIPHYLLUM

ARACEAE

Genus of evergreen perennials, with rhizomes, grown for their foliage and flowers. Frost tender. Prefers a humid atmosphere, humus-rich, moist soil and partial shade. Propagate by division in spring or summer. ⓘ All parts of the plants may cause mild stomach upset if ingested, and contact with the sap may irritate skin.
***S.* 'Clevelandii'.** See *S. wallisii* 'Clevelandii'.

S. floribundum. Evergreen, tufted, short-stemmed perennial. H and S to 1ft (30cm). Produces clusters of lance-shaped, long-pointed, long-stalked, glossy, dark green leaves, to 6in (15cm) long. Intermittently bears narrowly ovate, white spathes, to 3in (8cm) long, each enclosing a green-and-white spadix. Z12 (min. 59°F/15°C)
***S.* 'Mauna Loa'** illus. p.468.
S. wallisii (Peace lily) illus. p.468.
'Clevelandii' (syn. *S.* 'Clevelandii') is an evergreen, tufted perennial. H and S to 2ft (60cm). Has broadly lance-shaped, semi-erect, glossy, mid-green leaves, 1ft (30cm) or more long. Intermittently bears ovate, white spathes, each 6in (15cm) long, with a central, green line, that surround fragrant, white spadices. Z11–12 (min. 50°F/10°C)

SPATHODEA

BIGNONIACEAE

Genus of one species of evergreen tree, grown for its showy, bell-shaped flowers and large, pinnate leaves. Frost tender. Needs full light and fertile, well-drained, moist soil. Young and pot-grown plants seldom flower. Propagate by seed in spring or by semiripe cuttings in summer.
S. campanulata (African tulip tree, Flame-of-the-forest) illus. p.453.

SPHAERALCEA

MALVACEAE

Genus of annuals, perennials, and deciduous subshrubs, evergreen in warm climates, grown for their mallowlike flowers. Fully hardy to frost hardy. Needs a warm, sunny site and fertile, well-drained soil. Propagate by seed or division in spring, or by softwood cuttings in midsummer.
S. ambigua illus. p.246.
S. munroana. Woody-based, gray-hairy perennial with unbranched stems. H and S 1½ft (45cm). Has ovate to almost diamond-shaped, shallowly lobed or scalloped, mid-green leaves. Bears saucer-shaped, bright reddish-orange flowers in many-flowered axillary and terminal panicles from midsummer to early fall. Z4–10

Sphaeropteris. See *Cyathea*.

SPIRAEA

ROSACEAE

Genus of deciduous or semievergreen shrubs, grown for their abundant, small flowers and, in some species, their foliage. Fully hardy. Requires sun and fertile, well-drained but not over-dry soil. On species and cultivars that flower on the current year's growth—*S.* x *billiardii*, *S. douglasii* and *S. japonica* and its cultivars—cut back young stems and remove very old ones in early spring. On species that flower on old wood, cut out older shoots in early spring, leaving young shoots to flower that year. Propagate *S. douglasii* by division from late fall to early spring, other species and cultivars by softwood cuttings in summer.
***S.* 'Arguta'** (Bridal wreath, Foam of May). Deciduous, arching, dense shrub. H and S 8ft (2.5m). Produces clusters of 5-petaled, white flowers from mid- to late spring. Leaves are narrowly oblong and bright green. Z5–8
***S.* x *cinerea* 'Grefsheim'.** Dense-growing, deciduous shrub. H and S 4–5ft (1.2–1.5m). Produces downy, arching stems and narrowly elliptic or lance-shaped, light sea-green leaves, downy above when young, with flattened silky hairs beneath. In mid-spring, before the leaves, bears corymbs of small, white flowers. Z4–7
***S. japonica* 'Anthony Waterer'** illus. p.154. **'Candlelight'** is a compact, clump-forming deciduous shrub. H 2–2½ft (60–75cm), S 36–39in (90–100cm). Butter-yellow spring foliage turns greenish yellow, then often fiery red in fall. Bears purplish pink flowers. **Golden Princess ('Lisp')**, H 20in (50cm), S 3ft (1m), has bronze-gold young leaves, later bright yellow leaves, orange-yellow in fall, and bright purplish pink flowers. **'Goldflame'** illus. p.156. **'Little Princess'** illus. p.153. **Magic Carpet ('Walbuma')**, H 2ft (60cm), S 3ft (90cm), is a lower-growing version of 'Goldflame', producing smaller leaves that are greenish yellow with bright red tips when young, turning pale gold, then orange and red in fall, and purplish pink flowers. Z3–8
S. nipponica. Deciduous, arching shrub. H and S 8ft (2.5m). Bears dense clusters of 5-petaled, white flowers in early summer. Stout, red shoots bear small, rounded, dark green leaves. Z4–8. **'Halward's Silver'**, H and S 3ft (1m), is slow-growing, very dense, and flowers profusely. **'Snowmound'** (syn. *S.n.* var. *tosaensis* of gardens) illus. p.131.
S. prunifolia. Deciduous, arching, graceful shrub. H and S 6ft (2m). In mid- and late spring, bears clusters of rosettelike, double, white flowers amid rounded to oblong, bright green leaves, coloring to bronze-yellow in fall. Z5–8
S. thunbergii. Deciduous or semi-evergreen, arching, dense shrub. H 5ft (1.5m), S 6ft (2m). Small clusters of 5-petaled, white flowers are borne from early to mid-spring. Has lance-shaped, pale green leaves. Z5–8
S.* x *vanhouttei (Bridal wreath) illus. p.145. **'Gold Fountain'** is a compact, bushy, deciduous shrub. H 6ft (2m), S 5ft (1.5m). Has slender, arching shoots with golden yellow foliage in spring, turning greenish yellow by midsummer. In early summer, bears bowl-shaped, white flowers in dense corymbs along the shoots. **'Pink Ice'**, H 4ft (1.2m), S 3ft (1m), is slow-growing with white-flecked leaves that can revert. Z4–7

SPIRANTHES

ORCHIDACEAE

See also ORCHIDS.
S. cernua (illus. p.466). Deciduous, terrestrial orchid. H 20in (50cm). Spikes of delicate, white flowers, ½in (1cm) long, with pale yellow centers, are produced in fall. Has narrowly lance-shaped leaves, 2–5in (5–12cm) long. Requires partial shade in summer. Z4–8

SPREKELIA

AMARYLLIDACEAE

Genus of one species of bulb, grown for its showy, red flowers in spring. Frost tender. Needs an open, sunny site and well-drained soil. Keep dry in winter; start into growth by watering in spring. Propagate by offsets in early fall.
S. formosissima (Aztec lily, Jacobean lily) illus. p.402.

STACHYS

LAMIACEAE/LABIATAE

Genus of late spring- or summer-flowering annuals, perennials and shrubs, some of which are evergreen, grown for their foliage and for their flowers. Fully hardy. Grows in any well-drained soil, tolerating even poor soil. Species listed below prefer an open, sunny site; others are woodland plants and are best in partial shade. Propagate by division in spring.
S. byzantina, syn. *S. lanata*, *S. olympica* (Lamb's tongue), illus. p.274. **'Primrose Heron'** illus. p.275. **'Silver Carpet'** is an evergreen, mat-forming perennial. H 6in (15cm), S 2ft (60cm). Has oblong-elliptic to lance-shaped, woolly, gray leaves. Rarely produces flowers. Good as a front-of-border or ground-cover plant. Z4–8
S. coccinea. Clump-forming perennial. H 2ft (60cm), S 1½ft (45cm). Has ovate-lance-shaped or oblong-triangular, mid-green leaves with a pronounced network of veins. Dense spikes of small, hooded, bright scarlet flowers, protruding from purple calyces, arise from leaf axils, from early to late summer. Z4–8
S. lanata. See *S. byzantina*.
S. macrantha. Clump-forming perennial. H and S 1ft (30cm). Has broadly ovate, crinkled, round-toothed, soft green leaves. Dense spikes of large, hooded, rose-purple flowers are produced in summer. Z7–9.
'Superba' illus. p.270.
S. officinalis, syn. *Betonica officinalis* (Betony). Mat-forming perennial. H 18–24in (45–60cm), S 1–1½ft (30–45cm). Produces dense spikes of hooded, tubular, purple, pink or white flowers on sturdy stems, arising, in summer, from mats of ovate-oblong to oblong, round-toothed, mid-green leaves. Z5–8. **'Hummelo'** illus. p268. **'Rosea'** has flowers of clearer pink.
S. olympica. See *S. byzantina*.

STACHYURUS

STACHYURACEAE

Genus of deciduous or semievergreen shrubs, grown for their 4-petaled flowers, which are borne before the leaves emerge. Fully to frost hardy; flower spikes, formed in fall, are usually unharmed by hard frosts. Requires a position in sun or partial shade, and fertile, moist but well-drained, not too heavy soil, preferably peaty and acidic. Does well when trained against a south- or west-facing wall. Propagate by softwood cuttings in summer.
S. chinensis. Deciduous, spreading, open shrub. H 6ft (2m), S 12ft (4m). In late winter and early spring, bears pendent spikes of small, bell-shaped, pale yellow flowers. Leaves are ovate and dark green. Z8–9.
'Celina' bears 50–60 flowers in racemes to 9in (23cm) long. **'Joy Forever'** has leaves with wide yellow margins, sometimes all-yellow. **'Magpie'** see *S.* 'Magpie'.
***S.* 'Magpie'**, syn. *S. chinensis* 'Magpie', *S. praecox* 'Magpie'. Deciduous, spreading, open shrub. H 5ft (1.5m), S 6ft (2m). Has arching, red-purple shoots and ovate, tapered, gray-green leaves, edged creamy-white. Bell-shaped, pale yellow flowers are borne in late winter and early spring. H5
S. praecox illus. p.144. **'Magpie'** see *S.* 'Magpie'.

STANHOPEA

ORCHIDACEAE

See also ORCHIDS.
S. tigrina. Evergreen, epiphytic orchid for a cool greenhouse. H 9in (23cm). Pendent spikes of fragrant, waxy, rich yellow and maroon flowers, 6in (15cm) across, with red-spotted, white lips, are produced in summer. Has broadly ovate, ribbed leaves, 1ft (30cm) long. Best grown in a hanging, slatted basket. Provide partial shade in summer. Z11–12 (min. 52–55°F/11–13°C; max. 86°F/30°C)

STAPELIA

APOCYNACEAE/ASCLEPIADACEAE

Genus of clump-forming, perennial succulents with erect, 4-angled stems. Stem edges are often indented and may bear small leaves that drop after only a few weeks. Flowers are often foul-smelling. Frost tender. Requires a position in sun or partial shade, and moderately fertile, gritty, well-drained soil. Propagate by seed or stem cuttings in spring or summer.
S. europaea. See *Caralluma europaea*.
S. flavirostris. See *S. grandiflora*.
S. gigantea illus. p.496.
S. grandiflora, syn. *S. flavirostris*, illus. p.488.
S. variegata. See *Orbea variegata*.

STAPHYLEA

Bladder nut

STAPHYLEACEAE

Genus of deciduous, spring-flowering shrubs and trees, grown for their flowers and bladderlike fruits. Fully hardy. Requires sun or partial shade and fertile, moist soil. Propagate species by softwood or greenwood cuttings in summer or by seed in fall, selected forms by softwood or greenwood cuttings in summer.
S. colchica. Deciduous, upright shrub with stout shoots. H and S 11½ft (3.5m). Erect panicles of bell-shaped, white flowers in late spring, are followed by inflated, greenish-white fruits. Bright green leaves each consist of 3–5 ovate leaflets. Z6–9
***S. holocarpa* 'Rosea'** illus. p.111.
S. pinnata (Bladder nut) illus. p.110.

Statice bellidifolia. See *Limonium bellidifolia*.
Statice suworowii. See *Psylliostachys suworowii*.

STAUNTONIA

LARDIZABALACEAE

Genus of evergreen, woody-stemmed, twining climbers, grown for their leaves, flowers and fruits. Male and female flowers are borne on separate plants. Frost hardy to frost tender. Grow in any well-drained soil and in sun or partial shade. Prune in early spring. Propagate by seed in spring or by stem cuttings in summer or fall.
S. hexaphylla illus. p.192.

STENANTHIUM
MELANTHIACEAE/LILIACEAE

Genus of summer-flowering bulbs. Fully hardy to frost hardy. Needs an open, sunny position in any well-drained soil. In cool areas, plant in a warm, sheltered site in light soil that does not dry out excessively. Propagate by seed in fall or by division in spring.

S. angustifolium. See *S. gramineum*.

S. gramineum, syn. *S. angustifolium*. Summer-flowering bulb. H to 5ft (1.5m), S 1½–2ft (45–60cm). Has long, narrowly strap-shaped, semierect, basal leaves. Stem produces a dense, branched, often arching spike of fragrant, star-shaped, white or green flowers, each ½–⅝in (1–1.5cm) across. Z9–11

STENOCACTUS
SYN. ECHINOFOSSULOCACTUS

CACTACEAE

Genus of spherical, perennial cacti with spiny, green stems that have very narrow, wavy ribs. Frost tender. Needs sun and well-drained soil. Water well during the growing season, much less when dormant in winter as it may rot off. Propagate by seed in spring or summer.

S. coptonogonus illus. p.487.

S. crispatus, syn. *Echinofossulocactus lamellosus*. Spherical, perennial cactus. H and S 3in (8cm). Green stem has 30–35 ribs. Bears funnel-shaped, flesh-colored or red flowers, ½–1¼in (1–3cm) across, from the crown in spring. Has flattened upper radial spines, shorter, more rounded lower ones and longer, rounded central spines with darker tips. Z10–12 (min. 41°F/5°C)

S. lamellosus. See *S. obvallatus*.

S. obvallatus, syn. *Echinofossulocactus pentacanthus*, *E. violaciflorus*, *Stenocactus lamellosus*, illus. p.484.

STENOCARPUS
PROTEACEAE

Genus of evergreen, summer- and fall-flowering shrubs and trees, grown for their flowers and foliage. Frost tender. Needs full light and fertile, well-drained soil. Water potted plants moderately, less in winter. Pruning is rarely necessary. Propagate by seed in spring or by semiripe cuttings in summer.

S. sinuatus (Australian firewheel tree). Slow-growing, evergreen, upright tree. H 40ft (12m) or more, S 15ft (5m). Has lustrous, deep green leaves, each 5–10in (12–25cm) long, lance-shaped and entire or with pairs of oblong lobes. In late summer to fall, bears bottle-shaped, bright scarlet flowers, clustered like the spokes of a wheel. Z10–12 (min. 45–50°F/7–10°C)

STENOCEREUS
CACTACEAE

Genus of treelike or shrubby, perennial cacti with prominently ribbed stems often densely spined. Frost tender; below 55°F (13°C) plants may become badly marked. Needs full sun and very well-drained soil. Propagate by seed in spring or stem cuttings in summer.

S. marginatus. See *Pachycereus marginatus*.

S. thurberi, syn. *Lemaireocereus thurberi*. Columnar, perennial cactus, branching from low down. H to 22ft (7m), S 3ft (1m). Has 5–6-ribbed, glossy, dark green stems, with very short-spined areoles set in close rows down each rib. Produces funnel-shaped, purple or pink flowers with red sepals in summer. Z11–12 (min. 50°F/10°C)

Stenolobium stans. See *Tecoma stans*.

STENOMESSON
AMARYLLIDACEAE

Genus of spring- and summer-flowering bulbs, grown for their umbels of long, often pendent, tubular flowers. Half hardy to frost tender. Needs an open, sunny situation and well-drained soil. Propagate by offsets in fall.

S. miniatum, syn. *Urceolina peruviana*, illus. p.407.

S. variegatum illus. p.407.

STENOTAPHRUM
POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.

***S. secundatum* 'Variegatum'.** Evergreen, spreading, rhizomatous, perennial grass. H 6in (15cm), S indefinite. Almost rigid, flattened, branching stems bear linear-oblong, flat to folded, pale green leaves with ivory-white stripes. In summer, produces erect racemes of brownish-green spikelets. Used as a lawn in warm climates. Z10–12 (min. 41°F/5°C)

STEPHANANDRA
ROSACEAE

Genus of deciduous, summer-flowering shrubs, grown for their habit, foliage, fall color, and winter shoots. Fully hardy. Needs sun or partial shade and fertile, not too dry soil. On established plants, cut out some older shoots after flowering. Propagate by softwood cuttings in summer or by division in fall.

S. incisa. Deciduous, arching shrub. H 5ft (1.5m), S 10ft (3m). Ovate, deeply lobed and toothed, bright green leaves turn orange-yellow in fall and stems become rich brown in winter. Produces crowded panicles of tiny, star-shaped, greenish-white flowers in early summer. Z4–7. **'Crispa'**, H 2ft (60cm), has wavy-edged and more deeply lobed leaves.

S. tanakae illus. p.132.

STEPHANOTIS
APOCYNACEAE/ASCLEPIADACEAE

Genus of evergreen, woody-stemmed, twining climbers, grown for their scented, waxy flowers. Frost tender. Need a humus-rich, well-drained soil and partial shade in summer. Water moderately, less in cold weather. Provide stems with support. Shorten over-long or crowded stems in spring. Propagate by seed in spring or by semiripe cuttings in summer.

S. floribunda (Madagascar jasmine) illus. p.460.

Sterculia acerifolia. See *Brachychiton acerifolius*.

Sterculia diversifolia. See *Brachychiton populneus*.

Sterculia platanifolia. See *Firmiana simplex*.

STERNBERGIA
AMARYLLIDACEAE

Genus of spring- or fall-flowering bulbs, grown for their large, crocuslike flowers. Frost hardy, but in cool areas grow against a sunny wall. Needs full sun and any well-drained, heavy or light soil that dries out in summer, when bulbs die down and need warmth and dryness. Leave undisturbed to form clumps. Propagate by division in spring or fall.

S. candida illus. p.415.

S. clusiana. Fall-flowering bulb. H to ¾in (2cm), S 3–4in (8–10cm). Strap-shaped, semierect, basal, grayish-green leaves, often twisted lengthways, emerge after flowering. Stems bear erect, goblet-shaped, yellow or greenish-yellow flowers, 1½–3in (4–8cm) long. Z6–9

S. lutea. Fall-flowering bulb. H 1–6in (2.5–15cm), S 3–4in (8–10cm). Bears strap-shaped, semierect, basal, deep green leaves together with a funnel-shaped, bright yellow flower, 1–2½in (2.5–6cm) long, on a leafless stem. Z6–9

S. sicula. Fall-flowering bulb. H 1–3in (2.5–7cm), S 2–3in (5–8cm). Narrowly strap-shaped, semierect, basal, deep green leaves, each with a central, paler green stripe, emerge with flowers. Each stem bears a funnel-shaped, bright yellow flower, ¾–1½in (2–4cm) long. Z6–9

STEWARTIA
SYN. STUARTIA

THEACEAE

Genus of deciduous or evergreen trees and shrubs, grown for their flowers, fall color, and usually peeling bark. Fully to frost hardy. Needs a sunny site, but with roots in shade, and shelter from strong winds. Requires fertile, moist but well-drained, neutral to acidic soil. Resents being transplanted. Propagate by softwood cuttings in summer or by seed in fall.

S. monadelpha illus. p.76.

S. pseudocamellia (illus. p.78). Deciduous, broadly columnar tree. H 70ft (20m), S 25ft (8m). Has ornamental, peeling bark and bears roselike, white flowers in midsummer. Ovate to elliptic, finely toothed, dark green leaves turn orange and red in fall. Z5–8

S. sinensis. Deciduous, broadly conical tree. H 40ft (12m), S 22ft (7m). Has peeling bark and ovate or elliptic, toothed, dark green leaves, turning brilliant red in fall. Bears roselike, fragrant, white flowers in midsummer. Z5–8

STIGMAPHYLLON
MALPIGHIACEAE

Genus of evergreen, woody-stemmed, twining climbers, grown for their clusters of 5-petaled flowers. Frost tender. Fertile, well-drained soil is needed, with partial shade in summer. Water freely when in full growth, less in low temperatures. Provide stems with support. Thin out crowded stems in spring. Propagate by semiripe cuttings in summer.

S. ciliatum illus. p.464.

STIPA
GRAMINEAE/POACEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.

S. arundinacea. See *Anemanthele lessoniana*.

S. calamagrostis illus. p.286.

S. gigantea (Golden oats) illus. p.287.

S. tenuissima illus. p.288.

STOKESIA
ASTERACEAE/COMPOSITAE

Genus of one species of summer-flowering, evergreen, perennial, grown for its long-lasting flower heads, which are good for cutting. Fully hardy. Needs sun or partial shade and fertile, well-drained soil. Propagate by division in spring or by seed in fall.

S. laevis illus. p.269. **'Blue Star'** is an evergreen, basal-rosetted perennial. H and S 1–1½ft (30–45cm). Bears cornflowerlike, pale blue flower heads, singly at stem tips in summer. Has narrowly lance-shaped, basal, mid-green leaves, slightly spiny near the bases and with pale greenish white midribs. Z5–9

STOMATIUM
AIZOACEAE

Genus of mat-forming, perennial succulents with short stems, each bearing 4–6 pairs of solid, 3-angled or semicylindrical leaves, often with toothed edges and incurved tips. Frost tender. Needs sun and well-drained soil. Propagate by seed or stem cuttings in spring or summer.

S. agninum. Mat-forming, perennial succulent. H 2in (5cm), S 3ft (1m) or more. Has solid, 3-angled or semicylindrical, soft gray-green leaves, 1½–2in (4–5cm) long, often without teeth. In summer, fragrant, daisylike, yellow flowers, ¾–2in (2–5cm) across, open in evening. Z10–12 (min. 45°F/7°C)

S. patulum. Mat-forming, perennial succulent. H 1¼in (3cm), S 3ft (1m). Has semicylindrical, gray-green leaves, each ¾in (2cm) long, with rough dots and 2–9 teethlike tubercles on upper surface. Bears fragrant, daisylike, pale yellow flowers, ¾in (2cm) across, in evening in summer. Z10–12 (min. 45°F/7°C)

Strangweja spicata. See *Bellevalia hyacinthoides*.

Stranvaesia. See *Photinia*.

STRATIOTES
HYDROCHARITACEAE

Genus of one species of semievergreen, perennial, submerged, free-floating water plant, grown for its foliage. Fully hardy. Requires sun. Grows in any depth of cool water. Thin plants as required. Propagate by separating young plants from runners in summer.

S. aloides (Water soldier) illus. p.435.

STRELITZIA
Bird-of-paradise flower

STRELITZIACEAE

Genus of large, evergreen, tufted, clump-forming, palmlike perennials, grown for their showy flowers. Frost tender. Grow in fertile, well-drained soil and in bright light shaded from direct sun in summer. Reduce watering in low temperatures. Propagate by seed or division of suckers in spring.
S. nicolai. Evergreen, palmlike perennial with a stout trunk. H 25ft (8m), S 15ft (5m). Has leaves, 5ft (1.5m) or more long, on long stalks and intermittently bears beaklike, white and pale blue flowers in boat-shaped, dark purple bracts. Z11–12 (min. 50°F/10°C)
S. reginae illus. p.476.

Streptanthera cuprea. See *Sparaxis elegans*.
Streptanthera elegans. See *Sparaxis elegans*.

STREPTOCARPUS

GESNERIACEAE

Genus of perennials, some of which are evergreen, grown for their showy flowers. Frost tender. Grow in a humid atmosphere in humus-rich, moist soil and in bright light away from direct sunlight. Avoid wetting leaves when watering; water less during cold periods. Propagate by seed in spring, by division after flowering, or by tip cuttings from bushy species or leaf cuttings from stemless species, in spring or summer.
***S.* 'Bethan'** illus. p.473.
S. caulescens. Erect perennial. H and S 1½ft (45cm) or more. Has small, narrow to ovate, fleshy, dark green leaves. Stalked clusters of small, tubular, violet-striped, violet or white flowers are borne in leaf axils intermittently. Z10–12 (min. 50°F/10°C)
***S.* 'Constant Nymph'.** Evergreen, stemless perennial. H 10in (25cm), S 20in (50cm). Has a rosette of strap-shaped, wrinkled leaves. Funnel-shaped, purplish-blue flowers, darker veined and yellow-throated, are intermittently produced in small clusters. Z10–12 (min. 41°F/5°C)
***S.* 'Crystal Ice'** illus. p.465.
S. kentaniensis. Herbaceous, stemless perennial. H 10in (25cm), S 8in (20cm). Has loose whorls of narrowly lance-shaped, wrinkled, hairy, dark green leaves, with a prominent mid-vein, held semierect. Clusters of 2–5 small, white flowers, with a radiating, violet vein pattern, are borne mainly in winter, but can bloom all year in ideal conditions. Z10–12 (min. 41°F/5°C)
***S.* 'Nicola'** illus. p.469.
S. rexii (Cape primrose). Stemless perennial. H to 10in (25cm), S to 20in (50cm). Has a rosette of strap-shaped, wrinkled, green leaves. Stems, 6in (15cm) or more long, bear loose clusters of funnel-shaped, pale blue or mauve flowers, 2in (5cm) long and with darker lines, intermittently at any time of year. Z10–12 (min. 41°F/5°C)
S. saxorum (False African violet). Evergreen, rounded, woody-based perennial. H and S 1ft (30cm) or more. Has small, ovate, hairy leaves in whorls. Lilac flowers with white tubes arise from leaf axils in summer–fall. Z10–12 (min. 50ºF/10ºC).

STREPTOSOLEN

SOLANACEAE

Genus of one species of evergreen or semievergreen, loosely scrambling shrub, grown for its flowers. Frost tender. Needs full sun and humus-rich, well-drained soil. Water freely when in full growth, less at other times. After flowering or in spring, remove flowered shoots and tie in new growths. Propagate by softwood or semiripe cuttings in summer.
S. jamesonii (Marmalade bush) illus. p.464.

STROBILANTHES

ACANTHACEAE

Genus of perennials and evergreen subshrubs, grown for their flowers. Frost hardy to frost tender. Grow in partial shade in fertile, well-drained soil. Propagate by seed, basal stem cuttings, or division in spring.
S. atropurpurea. See *S. wallichii*.
S. dyeriana (Purple Shield) illus. p.311.
S. wallichii, syn *S. atropurpurea*, illus. p.250.

STROMANTHE

MARANTACEAE

Genus of evergreen, creeping perennials, grown mainly for their foliage but also for their showy flower bracts. Frost tender. Prefers high humidity, partial shade, and open soil or compost. Use soft water if possible and do not allow to dry out. Propagate by division in spring.
S. sanguinea. Strong-growing, evergreen, erect perennial. H and S to 5ft (1.5m). Lance-shaped leaves are glossy, green above with paler midribs, reddish below. Bears panicles of small, 3-petaled, white flowers in the axils of showy, bright red bracts, usually in spring but also in summer–fall. Z11–12 (min. 50°F/10°C)

STROMBOCACTUS

CACTACEAE

Genus of one species of extremely slow-growing, hemispherical to cylindrical, perennial cactus. Takes 5 years from seed to reach ⅛in (1cm) high. Funnel-shaped flowers are 1½in (4cm) across. Frost tender. Needs sun and very well-drained soil. Susceptible to overwatering. Propagate by seed in spring or summer.
S. disciformis illus. p.481.

STRONGYLODON

PAPILIONACEAE/LEGUMINOSAE

Genus of evergreen shrubs or woody-stemmed, twining climbers, grown for their large, clawlike flowers. Frost tender. Needs humus-rich, moist but well-drained soil, and partial shade in summer. Water freely when in full growth, less at other times. Provide support. If necessary, thin crowded stems in spring. Propagate by seed or stem cuttings in summer, or by layering in spring.
S. macrobotrys (Jade vine). Fast-growing, evergreen, woody-stemmed, twining climber. H to 70ft (20m). Leaves have 3 ovate, glossy leaflets and are pinkish-bronze, turning rich green. Pealike, luminous, blue-green flowers, 3in (8cm) long, are produced in dense, pendent spikes from winter to spring, rarely in summer. Z12 (min. 59°F/15°C)

STYLIDIUM

STYLIDIACEAE

Genus of annuals, herbaceous perennials and subshrubs with grasslike leaves, grown for their unusual flowers that have fused, "triggered" stamens adapted for pollination by insects. Frost tender. Grow in fertile soil and in bright light. Propagate by seed in spring.
S. graminifolium (Trigger plant). Rosetted perennial. H and S to 6in (15cm) or more. Grasslike, stiff, dark green leaves, with toothed margins, rise from ground level. Bears tiny, pale pinkish-mauve flowers in narrow spikes, 1ft (30cm) or more long, in summer. Z10–12 (min. 45°F/7°C)

STYLOPHORUM

PAPAVERACEAE

Genus of spring-flowering, herbaceous perennials with large, deeply lobed leaves, nearly all as basal rosettes. Fully hardy. Needs partial shade and humus-rich, moist, peaty soil. Propagate by division in spring or by seed in fall.
S. diphyllum. Perennial with basal rosettes of large, lobed, hairy leaves. H and S 1ft (30cm) or more. Bears open cup-shaped, golden-yellow flowers in spring, on upright, branched stems. Prefers rich, woodland conditions. Z4–6

STYPHNOLOBIUM

PAPAVERACEAE

Genus of mainly deciduous, sometimes evergreen, trees and shrubs, cultivated for their elegant habit, handsome, pinnate foliage, and fragrant, pealike flowers. Fully hardy to frost tender. Grow in a shrub border, or as specimen plants. In frost-prone areas, grow at the base of a warm, sunny wall, or in a greenhouse. They need long, hot summers to flower well. Propagate by seed in spring.
S. japonicum, syn. *Sophora japonica* (Pagoda tree). Deciduous, spreading tree. H and S 70ft (20m). Dark green leaves consist of 9–15 ovate leaflets. On mature trees, long clusters of pealike, creamy-white flowers are borne in late summer and early fall. Does best in hot summers. Z4–8.
'Pendula' (syn. *Sophora japonica* 'Pendula'), H and S 10ft (3m), has long, hanging shoots with dark green foliage.

STYRAX

STYRACACEAE

Genus of deciduous or evergreen, summer-flowering trees and shrubs, grown for their foliage and flowers. Fully hardy to frost hardy. Prefers a sheltered position in sun or partial shade and moist, neutral to acidic soil. Good for a woodland garden. Propagate by softwood cuttings in summer or by seed in fall.
S. hemsleyanus. Broadly ovate, ultimately rounded, deciduous tree. H 25ft (8m), S 15ft (5m). Has ovate to obovate, toothed, dark green leaves, to 5in (12cm) long. Bell-shaped white flowers are borne in terminal racemes or few-branched panicles in early summer. Z5–9
S. japonicus illus. p.72. **'Emerald Pagoda'** see *S.j.* 'Sohuksan'. **'Purple Dress'** is a graceful, spreading, deciduous tree. H and S 20–33ft (6–10m). Has dark purplish leaves and bears bell-shaped, pale pink flowers. **'Sohuksan'** (syn. *S.j.* 'Emerald Pagoda') is vigorous, with larger, leathery, dark green leaves and larger flowers, to 1in (2.5cm) across. Z5–9
S. obassia (Fragrant snowbell). Deciduous, spreading tree. H 40ft (12m), S 22ft (7m). Bears long, spreading clusters of fragrant, bell- to funnel-shaped, white flowers in early summer. Has elliptic to rounded, dark green leaves. Z5–9
S. officinalis illus. p.112.

Sulcorebutia arenacea. See *Rebutia arenacea*.
Sulcorebutia rauschii. See *Rebutia steinmannii*.
Sulcorebutia tiraquensis. See *Rebutia steinmannii* subsp. *tiraquensis*.
Sutera. See *Chaenostoma* except for: *S. grandiflora* for which see *Jamesbrittenia grandiflora*.

SUTHERLANDIA

PAPILIONACEAE/LEGUMINOSAE

Genus of evergreen shrubs, grown for their flowers and fruits. Frost tender. Requires full light and fertile, well-drained soil. Water containerized specimens freely when in full growth, moderately at other times. Remove old, twiggy stems at ground level in late winter. Propagate by seed in spring. Red spider mite may be troublesome.
S. frutescens illus. p.456.

SWAINSONA

PAPILIONACEAE/LEGUMINOSAE

Genus of annuals, evergreen perennials, and subshrubs, grown for their flowers. Frost tender. Needs full light or partial shade and humus-rich, well-drained soil. Water freely when in active growth, moderately at other times. Propagate by seed in spring or by semiripe cuttings in summer.
S. galegifolia (Darling pea). Evergreen, subshrub with spreading to semiscandent stems. H 2–4ft (60cm–1.2m), S 1–2ft (30–60cm). Leaves have 11–25 narrowly oblong, mid- to deep green leaflets. Pealike, red, pink, purple, blue or yellow flowers are produced in late spring and summer. Remove old, flowered shoots in late winter. Z10–12 (min. 41–45°F/5–7°C)

SYAGRUS
Queen palm

ARECACEAE/PALMAE

Genus of evergreen palms, grown for their majestic appearance. Frost tender. Requires full light or partial shade and humus-rich, well-drained soil. Water containerized specimens moderately, less when temperatures are low. Propagate by

seed in spring at not less than 75°F (24°C). Red spider mite may be a nuisance.
S. romanzoffiana, syn. *Arecastrum romanozoffianum* (Queen palm). Sturdy, evergreen palm. H to 70ft (20m), S 20–30ft (6–10m). Has feather-shaped leaves with lustrous, green leaflets. Mature trees bear clusters of yellow flowers in summer. Z11–12 (min.55°F/13°C)

SYCOPSIS

HAMAMELIDACEAE

Genus of evergreen trees and shrubs, grown for their foliage and flowers. Fully hardy to frost tender. Needs a sheltered position in sun or partial shade and fertile, not too dry, peaty soil. Propagate by semiripe cuttings in summer.
S. sinensis. Evergreen, upright shrub. H 15ft (5m), S 12ft (4m). Leaves are ovate, glossy and dark green. Flowers lack petals but have showy, dense clusters of red-tinged, yellow anthers in late winter or early spring. H5

Symphandra pendula. See *Campanula pendula*.
Symphandra wanneri. See *Campanula wanneri*.

SYMPHORICARPOS

CAPRIFOLIACEAE

Genus of deciduous shrubs, with inconspicuous, bell-shaped flowers, grown mainly for their clusters of showy, long-persistent fruits. Fully hardy. Requires sun or partial shade and fertile soil. Propagate by softwood cuttings in summer or by division in fall. ☤ Fruits may cause mild stomach upset if ingested; contact with them may irritate skin.
S. albus (Snowberry). **var. *laevigatus*** (illus. p.142) is a vigorous, deciduous, dense shrub, part upright, part arching. H and S 6ft (2m). Large, marblelike, white fruits follow tiny, bell-shaped, pink flowers, borne in summer. Rounded leaves are dark green. Z3–7
***S.* x *chenaultii* 'Hancock'.** Deciduous, procumbent, dense shrub. H 3ft (1m), S 10ft (3m). Has ovate, bronze leaves maturing to bright green. Open-bell-shaped, white flowers are borne from early to midsummer. Produces sparse, small, spherical, deep lilac-pink fruits. Provides excellent groundcover. Z4–7
S. orbiculatus (Coralberry, Indian currant). Deciduous, bushy, dense shrub. H and S 6ft (2m). Bears tiny, bell-shaped white or pink flowers in late summer and early fall, then spherical, deep purplish-red fruits. Ovate leaves are dark green. Does best after a hot summer. Z2–7. **'Foliis Variegatis'** (syn. *S.o.* 'Variegatus') illus. p.160.

SYMPHYOTRICHUM

Michaelmas daisy

ASTERACEAE/COMPOSITAE

Genus of annuals, biennials, and perennials with daisylike flower heads borne in summer to fall. Fully hardy to frost tender. Prefers sun or partial shade and fertile, well-drained soil, with adequate moisture all summer. Tall plants require staking. Propagate by softwood cuttings in spring or by division in spring or fall. Spray modern forms of *S. novi-belgii* against mildew and insect attack. Other species may suffer too. See also feature panel p.249.
***S.* 'Coombe Fishacre'**, syn. *Aster* 'Coombe Fishacre' (illus. p.249). Clump-forming, upright perennial. H to 3ft (90cm), S 14in (35cm). Has lance-shaped, mid-green leaves. In late summer, erect stems bear abundant, daisylike, pinkish-mauve flower heads with yellow centers that age to red. Z5–9
***S. cordifolium* 'Silver Spray'**, syn. *Aster cordifolius* 'Silver Spray' (illus. p.249). Bushy perennial. H 4ft (1.2m), S 3ft (1m). Dense, arching stems bear sprays of small, pink-tinged, white flower heads in fall. Mid-green leaves are lance-shaped. Needs staking. Z3–8
S. diffusus. See *S. lateriflorum*.
S. ericoides, syn. *Aster ericoides*. Clump-forming, bushy perennial. H 3ft (1m), S 1ft (30cm). From late summer to late fall, bears daisylike, yellow-centered, white flower heads, sometimes shaded pink or blue, in lax panicles. Has small, lance-shaped, mid-green leaves and slender, freely branched stems. Z5–8.
'Blue Star', H 32in (80cm), has soft mauve-blue ray florets. **'Golden Spray'** (illus. p.249) produces pink-tinged, white flower heads, with golden-yellow centers. **'Pink Cloud'**, H 32in (80cm), is vigorous, with arching sprays of pale pink flower heads. **f. *prostratum***, H to 8in (20cm), S 2ft (60cm), provides good groundcover and has tiny, needlelike leaves, and white or pale mauve flower heads. **f. *prostratum* 'Snow Flurry'** has pure white flowers; is good in gravel or in a rock garden. **'Ringdove'**, H 3ft (1m), S 1ft (30cm), has narrowly lance-shaped, mid-green leaves and a profusion of small, daisylike, yellow-centered, soft lilac flower heads in fall. **'White Heather'** (illus. p.249) has long-lasting, neat, white flower heads in late fall and wiry stems that may need support.
***S.* 'Kylie'**, syn. *Aster* 'Kylie'. Clump-forming, upright perennial. H 3ft (100cm), S 1½ft (45cm). Has lance-shaped, mildew-resistant, deep-green leaves. In late summer, upright then arching sprays of small, daisylike, clear pastel-pink flower heads are borne in profusion. Z4–8
S. laeve, syn. *Aster laevis*. Variable, clump-forming perennial. H 4ft (1.2m), S 20in (50cm). Has long, lance-shaped, mildew-resistant, mid-green leaves. In late summer, upright purplish stems bear abundant sprays of daisylike, pale purple flowers. Z4–8. **'Bluebird'** has violet-blue flowers.
S. lateriflorum, syn. *Aster diffusus, A. lateriflorus, S. diffusus*. Branching perennial. H 2ft (60cm), S 20in (50cm). Bears sprays of tiny, mauve flower heads, with pinkish-brown centers, in fall. Lance-shaped leaves are small and dark green. Z3–9. **var. *horizontale*** has flower heads that are sometimes tinged pink, with darker pink centers. **'Lady in Black'**, H 4ft (1.2m), has bronze-purple leaves and yellow-centered, white flower heads, and retains its leaf coloring well during the growing season. **'Prince'**, H 20in (50cm), has bronze-purple leaves, which fade to dark green, and small, pink-centered, white flower heads.
***S.* 'Little Carlow'** (*S. cordifolium* hybrid), syn. *Aster* 'Little Carlow' (illus. p.249). Clump-forming, upright perennial. H 4ft (1.2m), S 1½ft (45cm). Has lance-shaped, mildew-resistant, deep-green leaves. In fall, upright sprays bear abundant, daisylike, bright mauve-blue flower heads. Z4–8
***S. novae-angliae* 'Andenken an Alma Pötschke'**, syn. *Aster novae-angliae* 'Andenken an Alma Pötschke'. Vigorous, upright perennial. H 30in (75cm), S to 2ft (60cm). In fall, produces clusters of single, pink flower heads on stiff stems. Has lance-shaped, rough leaves. May need staking. **'Autumn Snow'** see *S.n-a* 'Herbstschnee'. **'Barr's Pink'** bears semidouble, bright rose-pink flower heads in summer–fall. **'Harrington's Pink'** (illus. p.249), H 4–5ft (1.2–1.5m), has single, clear pink flower heads with yellow centers. Those of **'Herbstschnee'** (syn. *A.n-a* 'Autumn Snow', *S.n-a* 'Autumn Snow'), H 2½–3½ft (75cm–1.1m), are white with yellow centers. **'Rosa Sieger'** (illus. p.249), H 4ft (1.2m), has pink flower heads. **'Violetta'** (illus. p.249), H 5ft (1.5m), produces yellow-centered, bright violet-purple flower heads. Z3–8
***S. novi-belgii* 'Apple Blossom'**, syn. *Aster novi-belgii* 'Apple Blossom' (illus. p.249). Vigorous, spreading perennial. H 3ft (90cm), S 2–2½ft (60–75cm). Panicles of single, pale soft pink flowers are borne in fall, amid lance-shaped, mid-green leaves. **'Carnival'** (illus. p.249), H 30in (75cm), S to 1½ft (45cm), bears double, cerise-red flower heads with yellow centers. Leaves are dark green; prone to mildew. **'Chequers'** (illus. p.249), H 3ft (90cm), S 2–2½ft (60–75cm), has single, purple flowers. **'Climax'**, H 5ft (1.5m), S 2ft (60cm), bears single, light blue flowers; mildew-resistant. The flower heads of **'Fellowship'**, H 4ft (1.2m), S 20in (50cm), are large, double, and clear, deep pink; those of **'Freda Ballard'** (illus. p.249) are semidouble and rich rose-red. **'Kristina'**, H 1ft (30cm), S 1½ft (45cm), has large, semidouble, white flower heads with yellow centers. **'Lassie'**, H 4ft (1.2m), S 30in (75cm), produces large, single, clear pink flowers. **'Little Pink Beauty'**, H 1½ft (45cm), S 20in (50cm), is a good dwarf semidouble, pink cultivar. **'Marie Ballard'** (illus. p.249), H to 3ft (1m), S to 1½ft (45cm), has double, mid-blue flowers; prone to mildew. **'Orlando'** (illus. p.249), H 3ft (1m), S to 1½ft (45cm), has large, single, bright pink flower heads with golden centers. Leaves are dark green; mildew may be a problem. **'Patricia Ballard'**, H 4ft (1.2m), S 30in (75cm), bears semidouble, pink flowers. Large, single flowers of **'Peace'** are mauve. **'Professor Anton Kippenberg'** (illus. p.249), H 1ft (30cm), S to 1½ft (45cm), has clear blue flowers with yellow centers; those of **'Raspberry Ripple'**, H 30in (75cm), S 2ft (60cm), are smaller and reddish-violet. **'Royal Ruby'**, H and S to 1½ft (45cm), has semidouble, rich red flower heads with yellow centers; prone to mildew. **'Royal Velvet'**, H 4ft (1.2m), S 30in (75cm), has single deep violet flowers. **'Sandford White Swan'**, H 3ft (90cm), S 2ft (60cm), bears white flower heads. Z4–8
***S.* 'Photograph'**, syn. *Aster* 'Photograph' (illus. p.249). Clump-forming, upright, compact perennial. H 3ft (1m), S 1ft (30cm). Has heart-shaped, mid-green leaves. In fall, upright then arching, branched sprays bear abundant, daisylike, glowing violet-blue flower heads. Z4–8
S. pilosum* var. *pringlei, syn. *Aster pilosus* var. *demotus, A. tradescantii* of gardens. Erect perennial. H 4ft (1.2m), S 20in (50cm). Has lance-shaped, mid-green leaves. In fall, clusters of small, white flower heads are borne on wiry, leafy stems and provide a good foil to bright, fall leaf colors. Z3–9
***S.* 'Sunhelene'**, syn. *Aster* 'Sunhelene' (illus. p.249). Clump-forming, upright, compact perennial. H 3ft (100cm), S 16in (40cm). Has lance-shaped, mildew-resistant, mid-green leaves. In late summer and fall, upright, branched sprays bear abundant, daisylike, double, blue-mauve flower heads. Z5–8
S. turbinellum, syn. *Aster turbinellus*. Clump-forming perennial. H 5ft (1.5m), S 3ft (1m). Has lance-shaped, dark green leaves. In late summer and fall, upright, wiry purplish-green stems bear panicles of daisylike, yellow-centered, pale violet flowers. Z5–8

SYMPHYTUM

Comfrey

BORAGINACEAE

Genus of vigorous, coarse perennials, best suited to wild gardens. Fully hardy. Prefers sun or partial shade and moist soil. Propagate by division in spring or by seed in fall; usually self-seeds. Propagate named cultivars by division only. ☤ Roots and leaves may cause severe discomfort if ingested; contact with foliage may irritate skin.
S. caucasicum illus. p.227.
***S.* 'Goldsmith'**, syn. *S. ibericum* 'Jubilee', *S. ibericum* 'Variegatum', *S.* 'Jubilee'. Clump-forming, rhizomatous perennial. H and S 1ft (30cm). Has ovate, hairy, dark green leaves with gold and cream markings. Bears pale blue flowers, tinged cream or pink, in spring. Z5–9
S. grandiflorum of gardens. See *S. ibericum*.
***S.* 'Hidcote Blue'.** Clump-forming perennial. H 20in (50cm), S 2ft (60cm). Similar to *S. ibericum*, but has pale blue flowers. Z4–7
S. ibericum, syn. *S. grandiflorum* of gardens. Clump-forming perennial. H 10in (25cm), S 2ft (60cm). Has lance-shaped, hairy, rich green leaves. Bears one-sided racemes of tubular, creamy flowers in spring. Provides good groundcover. Z3–9. **'Jubilee'** see *S.* 'Goldsmith'.
'Variegatum' see *S.* 'Goldsmith'.
***S.* 'Jubilee'.** See *S.* 'Goldsmith'.
S.* x *uplandicum (Russian comfrey). **'Variegatum'** illus. p.227.

SYMPLOCOS

SYMPLOCACEAE

Genus of evergreen or deciduous trees and shrubs, of which only the species described is in general cultivation.
S. paniculata is grown for its flowers and fruits. Fruits are most prolific when

several plants are grown together. Fully hardy to frost tender. Needs full sun and fertile, moist but well-drained soil. Propagate by seed in fall.

S. paniculata (Sapphire berry; illus. p.142). Deciduous, upright, bushy shrub or small tree. H and S 15ft (5m). Has elliptic to oblong, finely toothed, sparsely hairy, dark green leaves. Panicles of small, fragrant, star-shaped, white flowers are borne in late spring and early summer, followed by small, metallic-blue fruits. Z5–8

***Synadenium compactum* var. *rubrum*.** See *Euphorbia bicompacta* var. *rubra*.

Synadenium grantii of gardens **'Rubrum'.** See *Euphorbia bicompacta* var. *rubra*.

SYNGONIUM

ARACEAE

Genus of evergreen, woody-stemmed, root climbers, grown for their ornamental foliage. Flowers are seldom produced in cultivation. Frost hardy to frost tender. Requires partial shade and humus-rich, well-drained soil. Water moderately, less when temperatures are low. Provide support, ideally with moss poles. Remove stem tips to promote branching. Propagate by leaf-bud or stem-tip cuttings in summer. ⓘ All parts may cause mild stomach upset if ingested; contact with the sap may irritate skin.

S. auritum, syn. *Philodendron auritum* of gardens *P. trifoliatum*, (Five fingers). Fairly slow-growing, evergreen, woody-stemmed, root climber. H 3–6ft (1–2m). Has glossy, rich green leaves divided into 3, sometimes 5, ovate leaflets, the central one the largest. Z12 (min. 59°F/15°C)

***S. erythrophyllum*.** Slow-growing, evergreen, root climber with slender, woody stems. H 3ft (1m) or more. Young plants have arrowhead-shaped leaves, flushed purple beneath. Leaves on mature plants have 3 lobes or leaflets and thicker, longer stems. Z12 (min. 59°F/15°C)

***S. hoffmannii*.** Moderately vigorous, evergreen, woody-stemmed, root climber. H 6–10ft (2–3m). Young plants have arrowhead-shaped leaves; mature ones have leaves divided into 3 gray-green leaflets with silvery-white veins. Z12 (min. 59°F/15°C)

S. podophyllum, syn. *Nephthytis triphylla* of gardens, illus. p.463. **'Trileaf Wonder'** illus. p.460.

***Synnotia*.** See *Sparaxis*.

SYNTHYRIS

PLANTAGINACEAE

Genus of evergreen or deciduous, spring-flowering perennials with gently spreading, rhizomatous rootstocks. Useful for rock gardens and peat beds. Fully hardy. Prefers a position in partial shade and moist soil. Propagate in late spring by seed or division.

S. missurica* subsp. *stellata, syn. *S. stellata*, illus. p.355.

***S. reniformis*.** Evergreen, clump-forming perennial. H 3–4in (8–10cm), S 6in (15cm). Has kidney-shaped to rounded, toothed, dark green leaves and, in spring, produces short, dense racemes of small, bell-shaped, blue flowers. Z6–9

***S. stellata*.** See *S. missurica* subsp. *stellata*.

SYRINGA

Lilac

OLEACEAE

Genus of deciduous shrubs and trees, grown for their dense panicles of small, tubular flowers, usually extremely fragrant. Fully hardy. Needs sun and deep, fertile, well-drained, preferably alkaline soil. Obtain plants on their own roots, since grafted plants usually sucker freely. Remove flower heads from newly planted lilacs, and deadhead for first few years. Cut out weak shoots in winter and, to maintain shape, prune after flowering. Straggly, old plants may be cut back hard in winter, but the next season's flowers will then be lost. Propagate by softwood cuttings in summer. Leaf miners, leaf spot and lilac blight may be troublesome. See also feature panel p.115.

***S.* 'Belle de Nancy'.** See *S. vulgaris* 'Belle de Nancy'.

***S.* 'Bellicent'.** See *S.* x *josiflexa* 'Bellicent'.

***S.* 'Charles Joly'.** See *S. vulgaris* 'Charles Joly'.

S.* x *chinensis (Rouen lilac). Deciduous, arching shrub. H and S 12ft (4m). Bears large, arching panicles of fragrant, tubular, single, lilac-purple flowers in late spring. Ovate leaves are dark green. Z3–7. **'Alba'** has white flowers.

***S.* 'Congo'.** See *S. vulgaris* 'Congo'.

***S.* 'Decaisne'.** See *S. vulgaris* 'Decaisne'.

S. emodi (Himalayan lilac). Vigorous, deciduous, upright shrub. H 15ft (5m), S 12ft (4m). Produces large, upright panicles of unpleasantly scented, tubular, single, very pale lilac flowers in early summer. Has large, elliptic-oblong, dark green leaves. Z7–8

***S.* 'Esther Staley'.** See *S.* x *hyacinthiflora* 'Esther Staley'.

***S.* x *hyacinthiflora* 'Esther Staley'** (syn. *S.* 'Esther Staley'). Vigorous, deciduous, spreading shrub, upright when young. H and S 15ft (5m). Has broadly heart-shaped leaves, bronze when young, often purple in fall. In mid- and late spring, bears fragrant, broadly conical panicles of red buds opening to lilac-pink flowers. Z3–8. **'Maiden's Blush'** produces large panicles of fragrant, single mid-pink flowers from darker buds in spring. One of the best pink lilacs. **'Pocahontas'** has single, purple-pink flowers.

***S.* x *josiflexa* 'Bellicent'**, syn. *S.* 'Bellicent'. Deciduous, upright, then arching shrub. H 12ft (4m), S 15ft (5m). Large panicles of fragrant, tubular, single, clear pink flowers are borne above ovate, dark green leaves in late spring and early summer. Z3–8

***S.* 'Katherine Havemeyer'.** See *S. vulgaris* 'Katherine Havemeyer'.

S. komarowii* subsp. *reflexa (illus. p.115). Vigorous, upright shrub. H and S 12ft (4m). Stout stems have elliptic–oblong, dark green leaves. In late spring and early summer, bears slender, nodding panicles of rich purple-pink flowers. Z3–7

***S.* 'Madame Antoine Buchner'.** See *S. vulgaris* 'Madame Antoine Buchner'.

***S.* 'Madame Florent Stepman'.** See *S. vulgaris* 'Madame Florent Stepman'.

***S.* 'Madame Lemoine'.** See *S. vulgaris* 'Madame Lemoine'.

***S.* 'Maréchal Foch'.** See *S. vulgaris* 'Maréchal Foch'.

***S.* 'Masséna'.** See *S. vulgaris* 'Masséna'.

***S.* 'Maud Notcutt'.** See *S. vulgaris* 'Maud Notcutt'.

***S. meyeri* 'Palibin'**, syn. *S. palibianina* of gardens, *S. velutina* of gardens (illus. p.115). Slow-growing, deciduous, bushy, dense shrub. H 5–6ft (1.5–2m), S 5ft (1.5m). Has small, ovate, deep green leaves. Bears dense panicles of fragrant, tubular, single, lilac-pink flowers in late spring and early summer. Z3–7

***S.* 'Michel Buchner'.** See *S. vulgaris* 'Michel Buchner'.

***S. microphylla*.** See *S. pubescens* subsp. *microphylla*.

***S.* 'Mrs. Edward Harding'.** See *S. vulgaris* 'Mrs. Edward Harding'.

S. palibiniana of gardens. See *S. meyeri* 'Palibin'.

***S.* 'Paul Thirion'.** See *S. vulgaris* 'Paul Thirion'.

S.* x *persica (Persian lilac; illus. p.115). Deciduous, bushy, dense shrub. H and S 6ft (2m). In late spring, bears small, dense panicles of scented, purple flowers. Dark green leaves are lance-shaped, sometimes 3-lobed. Z3–7.

'Alba' (illus. p.115) has white flowers.

***S.* 'Président Grévy'.** See *S. vulgaris* 'Président Grévy'.

***S.* x *prestoniae* 'Elinor'.** Vigorous, deciduous, upright shrub. H and S 12ft (4m). Has large, nodding panicles of fragrant, tubular, single, pale lavender-blue flowers from purple buds in early summer, and large, ovate, dark green leaves. Z3–7

***S.* 'Primrose'.** See *S. vulgaris* 'Primrose'.

S. pubescens* subsp. *microphylla, syn. *S. microphylla*. Deciduous, bushy shrub. H and S 6ft (2m). Small panicles of very fragrant, tubular, single, pink flowers are borne in early summer, often again in fall, amid lance-shaped to ovate, mid-green leaves. H6. **subsp. *microphylla* 'Superba'** (illus. p.115). **subsp. *patula* 'Miss Kim'** (illus. p.115) bears purple flowers maturing to bluish-white.

***S. reticulata*.** Deciduous, broadly conical tree or shrub. H 30ft (10m), S 20ft (6m). Large panicles of fragrant, tubular, single, creamy-white flowers open above lance-shaped to ovate, bright green leaves from early to midsummer. Z3–7

***S.* 'Souvenir de Louis Spaeth'.** See *S. vulgaris* 'Andenken an Ludwig Spaeth'.

S. velutina of gardens. See *S. meyeri* 'Palibin'.

***S. vulgaris* 'Andenken an Ludwig Späth'**, syn. *S.* 'Souvenir de Louis Späth' (illus. p.115). Deciduous, upright, then spreading shrub. H and S 15ft (5m). Long, slender panicles of fragrant, tubular, single, deep purplish-red flowers are borne profusely above heart-shaped, dark green leaves in late spring. Z3–7.

Beauty of Moscow see *S.v.* 'rasavitsa Moskvy'. **'Belle de Nancy'** (syn. *S.* 'Belle de Nancy') has large, dense panicles of double, mauve-pink flowers, which open from purple-red buds. **'Charles Joly'** (syn. *S.* 'Charles Joly'), H and S 10ft (3m), bears deep purple-red flowers from mid-spring to early summer. **'Congo'** (syn. *S.* 'Congo') bears large panicles of single, deep lilac-purple flowers, purplish-red in bud, in spring. **'Decaisne'** (syn. *S.* 'Decaisne') is compact, with abundant, single, dark blue flowers that are shaded purple, and mid-green leaves.

'Firmament' (illus. p.115) bears profuse, lilac-blue flowers in mid-spring. **'Jan van Tol'** (syn. *S.* 'Jan van Tol') bears long, semipendent panicles of single, narrow-petaled, pure white flowers.

'Katherine Havemeyer' (syn. *S.* 'Katherine Havemeyer'; illus. p.115) has double, lavender-purple, then lavender-pink flowers in dense, conical panicles.

'Krasavitsa Moskvy' (syn. *S.v.* Beauty of Moscow) is upright, with pearly pink buds opening to double, white flowers, shaded pale lavender. **'Madame Antoine Buchner'** (syn. *S.* 'Madame Antoine Buchner') bears long, narrow panicles of deep purple-red buds, which open to double, pinkish-mauve flowers, fading with age. **'Madame Florent Stepman'** (syn. *S.* 'Madame Florent Stepman') illus p.113. **'Madame Lemoine'** (syn. *S.* 'Madame Lemoine'; illus. p.115.) bears compact panicles of large, double, white flowers. **'Maréchal Foch'** (syn. *S.* 'Maréchal Foch') has broad, open panicles of very large, single, carmine-pink flowers. **'Masséna'** (syn. *S.* 'Masséna') bears loose panicles of large, deep red-purple flowers. **'Maud Notcutt'** (syn. *S.* 'Maud Notcutt') produces large panicles of single, pure white flowers. **'Michel Buchner'** (syn. *S.* 'Michel Buchner') has large panicles of double, pink-lilac flowers, each with a white eye. **'Mrs. Edward Harding'** (syn. *S.* 'Mrs. Edward Harding') has large panicles of double or semidouble, purple-red flowers that fade to pink. **'Paul Thirion'** (syn. *S.* 'Paul Thirion') bears double lilac-pink flowers that open from deep purple-red buds. **'Président Grévy'** (syn. *S.* 'Président Grévy') bears very large panicles of double, lilac-blue flowers that open from red-violet buds. **'Primrose'** (syn. *S.* 'Primrose') produces small, dense panicles of pale yellow flowers.

'Sensation' has very distinctive, single, purple flowers edged white.

SYZYGIUM

MYRTACEAE

Genus of evergreen shrubs and trees, grown for their overall appearance. Frost hardy to frost tender. Prefers full light (but tolerates some shade) and fertile, well-drained soil. Water containerized plants freely when in full growth, moderately at other times. Very tolerant of pruning, but is best grown naturally. Propagate by seed in spring or semiripe cuttings in summer.

S. paniculatum, syn. *Eugenia australis* of gardens, *E. paniculata* (Australian brush cherry), illus. p.450.

T

TABEBUIA

BIGNONIACEAE

Genus of deciduous or evergreen, mainly spring-flowering trees and shrubs, grown for their foliage, although flowers may form once plants reach about 10ft (3m) tall. Frost tender. Requires full light and fertile, well-drained, but not dry soil. Container-grown plants are unlikely to flower. Pruning, other than shaping while young in fall, is not needed. Propagate by seed or air-layering in spring, or by semiripe cuttings in summer.

T. chrysantha (Golden trumpet tree) illus. p.452.

T. pentaphylla of gardens. See *T. rosea*.

T. rosea, syn. *T. pentaphylla* of gardens (Pink trumpet tree). Fast-growing, evergreen, broadly upright tree with a long, smooth trunk, branching near the top; deciduous in cool climates. H and S 50ft (15m) or more. Leaves have 5 ovate leaflets. In spring, bears terminal clusters of trumpet-shaped, rose- to lavender-pink or white flowers, with yellow throats. Z11–12 (min. 50–59°F/10–15°C)

Tacitus bellus.
See *Graptopetalum bellum*.

TAGETES

ASTERACEAE/COMPOSITAE

Genus of annuals and herbaceous perennials that flower continuously throughout summer and until the fall frosts. Useful as bedding plants and for edging. All are also good in containers and many provide long-lasting cut flowers. Half hardy. Grow in sun and in fertile, well-drained soil. Deadhead to ensure a long flowering period. Propagate by seed sown under glass in mid-spring. Prone to slugs, snails, and botrytis. African marigolds are excellent for formal bedding, whereas French, Afro-French and Signet marigolds are more suitable for the edge of a mixed border. All are good in containers and provide long-lasting cut flowers. ⓘ Contact with the foliage may aggravate skin allergies. There are 4 main hybrid groups, which are cultivated for garden use:

African marigolds (African Group)
Also sometimes known as American marigiolds. Compact annuals, derived from *T. erecta*, with angular, hairless stems and pinnate, sparsely glandular leaves, 2–4in (5–10cm) long, each with 11–17 narrowly lance-shaped, pointed, sharply toothed leaflets, to 2in (5cm) long. Large, densely double, pomponlike, terminal flower heads, usually to 5in (12cm) across, each with 5–8 or more ray-florets and numerous orange to yellow disc-florets, are produced from late spring to fall. S to 1½ft (45cm).

French marigolds (French Group)
Compact annuals, derived from *T. patula*, with hairless, purple-tinged stems and pinnate leaves, to 4in (10cm) long, with lance-shaped to narrowly lance-shaped, toothed leaflets, to 1¼in (3cm) long. Solitary, usually double flower heads, typically to 2in (5cm) across, with few to many red-brown, yellow, orange, or parti-colored ray-florets and usually several disk-florets, are borne singly or in cymelike inflorescences from late spring to fall. S to 1ft (30cm).

Afro-French marigolds (Afro-French Group)
Bushy annuals, derived from crosses of *T. erecta* and *T. patula*, with angular to rounded stems, branched and sometimes stained purple, and pinnate leaves, 2–5in (5–13cm) long, with lance-shaped leaflets, to 2in (5cm) long. Numerous small, single or double, yellow or orange flower heads, usually 1–2½in (2.5–6cm) across, often marked red-brown, are produced singly or in cymelike inflorescences from late spring to fall. S 12–16in (30–40cm).

Signet marigolds (Signet Group)
Upright annuals, derived from *T. tenuifolia*, with cylindrical, simple or many-branched stems and pinnate leaves, 2–5in (5–13cm) long, with narrowly lance-shaped, toothed leaflets, to ¾in (2cm) long. Many single flower heads, usually to 1in (2.5cm) across, with yellow or orange florets (few ray-florets and several disk-florets), are borne in cymelike inflorescences from late spring to fall. S to 16in (40cm).

***T.* Bonanza Series.** French marigolds. H 1ft (30cm). In summer, they produce double, deep orange-mahogany flower heads, with gold margins, golden orange-mahogany, or orange-yellow-mahogany. Z10–11

***T.* Boy Series** Compact French marigolds. H 8–12in (20–30cm). Have divided, mid-green leaves and bear double, crested flower heads in shades of orange, yellow, gold, mahogany red and yellow, with mahogany brown centers, from late spring to summer. Z10–11. [Orange] illus. p.324.

***T.* 'Cinnabar'** illus. p.308.

***T.* Durango Series.** French marigolds. H 8–10in (20–25cm). Well-branched stems produce a profusion of anemone-type flower heads in gold, orange, mahogany-red, tangerine or yellow, plus 3 bicolors. Z10–11

T. erecta (African marigold, Aztec marigold). Fast-growing, upright, bushy annual. H 1–3ft (30cm–1m), S 1–1½ft (30–45cm). Has deeply divided, aromatic, glossy, deep green leaves. Daisylike, double flower heads, 2in (5cm) across, are borne in summer and early fall. Z10–11. **'Vanilla'** (syn. *T.* 'Vanilla'), H to 14in (35cm), has creamy-white flower heads from late spring to early fall.

***T.* 'Fireball'.** Compact French marigold. H 10–12in (25–30cm), S 6–8in (15–20cm). From late spring to early fall, fully double flower heads open deep red, turn bronze, then age to rust orange, all colors borne simultaneously. Z10–11

***T.* 'Garland Orange'.** Vigorous African marigold. H 3–4½ft (90–130cm), S 2ft (60cm). From early to late summer, strong, upright stems bear fully double, deep orange flower heads, 3½–4½in (9–11cm) across. Drought resistant and suitable for cutting. Z10–11

***T.* Gem Series.** Signet marigolds. H to 9in (23cm). Produce flower heads in lemon-yellow, deep orange, or bright orange with darker markings. Z10–11. **'Lemon Gem'** produces lemon-yellow flower heads. **'Tangerine Gem'** illus. p.326.

***T.* Gold Coins Series** illus. p.320.

***T.* 'Lemon Zest'.** French marigold. H 9in (23cm). Bears anemone-type, pale lemon-yellow flower heads. Z10–11

***T.* Marvel Series.** Compact African marigolds. H 1½ft (45cm). Produce densely double flower heads in gold, orange, yellow, lemon-yellow or in a formula mixture of colors, from late spring to early fall. Z10–11

***T.* Pascal Mixed.** Compact, bushy French marigolds. H 8–12in (20–30cm), S 10in (25cm). From late spring to early fall, produce single flower heads, 1¼–1½in (3–4cm) across, in shades of yellow, red, and orange, some flowers combining 2 colors. Z10–11

T. patula (French marigold). Fast-growing, bushy annual. H and S to 1ft (30cm). Has deeply divided, aromatic, deep green leaves. Single or carnationlike, double flower heads, in shades of yellow, orange, red or mahogany, are borne in summer and early fall. Z10–11

***T.* 'Strawberry Blonde'.** Bushy, vigorous French marigold. H 10–12in (25–30cm), S 6–8in (15–20cm). From late spring to early fall, produces double flower heads, to 2in (5cm) across, that change color as they age, combining shades of rose red, yellow, and peach pink. Z10–11

***T.* Taishan Series.** Compact, upright African marigolds. H 1ft (30cm), S 10in (25cm). Produce dense, rain-resistant, yellow, golden yellow or orange flower heads. Z10–11

***T.* 'Vanilla'.** See *T. erecta* 'Vanilla'.

***T.* Zenith Extra Series.** Vigorous, strongly branching triploid marigolds, produced from a cross between African/American and French types. H 1ft (30cm). Bear a profusion of double, yellow, orange, or red flower heads from late spring to early fall. Z10–11

Talbotia elegans. See *Vellozia elegans*.

TALINUM

PORTULACACEAE

Genus of summer-flowering annuals, biennials, and perennials, some of which are evergreen, grown for their flowers and succulent foliage. Useful for rock gardens, troughs, and alpine houses and as potted plants. Fully hardy to frost tender. Needs sun and gritty, not too dry, well-drained soil. Propagate by seed in fall.

T. sediforme. syn. *T. okanoganense*, *Phemeranthus sediformis*. Cushion-or mat-forming, prostrate perennial. H to 1½in (4cm), S to 4in (10cm). Succulent stems produce tufts of cylindrical, succulent, grayish-green leaves. Tiny, cup-shaped, white flowers are borne in summer. Excellent for cultivating in a trough or alpine house. H5

TAMARIX

Tamarisk

TAMARICACEAE

Genus of deciduous shrubs and trees, grown for their foliage, habit and racemes of small flowers. In mild areas is very wind-resistant and thrives in exposed, coastal positions, making excellent hedges. Fully hardy. Requires sun and fertile, well-drained soil. Cut back in spring. Propagate by semiripe cuttings in summer or by hardwood cuttings in winter.

T. gallica. Deciduous, spreading shrub or tree. H 12ft (4m), S 20ft (6m). Purple, young shoots are clothed with tiny, scalelike, blue-gray leaves. Star-shaped, pink flowers are borne in slender racemes in summer. Z4–8

T. pentandra. See *T. ramosissima*.

T. ramosissima, syn. *T. pentandra*, illus. p.114. **'Pink Cascade'** is a graceful shrub or small tree. H and S 15ft (5m). Has arching, red-brown shoots and pointed leaves. In late summer and early fall, rich pink flowers are borne in dense racemes on the new shoots. Z3–8

TANACETUM

SYN. PYRETHRUM

ASTERACEAE/COMPOSITAE

Genus of annuals and perennials, some of which are evergreen, often with aromatic foliage, grown for their daisylike flower heads. Fully to frost hardy. Grow in sun and in fertile, well-drained soil. Propagate by division in spring. ⓘ Contact with the foliage may aggravate skin allergies. *T. parthenium* will self-seed freely.

T. argenteum, syn. *Achillea argentea*, illus. p.346.

T. coccineum, syn. *Chrysanthemum coccineum*, *Pyrethrum coccineum*, *Pyrethrum roseum* (Pyrethrum). **'Brenda'** (syn. *Pyrethrum* 'Brenda') is an erect perennial. H 2ft (60cm), S 1½ft (45cm) or more. Has somewhat aromatic, feathery leaves. Single, magenta-pink flower heads are borne in late spring and early summer. Z3–7. **'Eileen May Robinson'** illus. p.232. **'James Kelway'** has deep crimson flower heads aging to pink.

T. densum* subsp. *amani, syn. *Chrysanthemum densum*, illus. p.347.

T. haradjanii, syn. *Chrysanthemum haradjanii*. Evergreen, mat-forming, woody-based perennial with a tap root. H and S 9–15in (23–38cm). Has broadly lance-shaped, much-divided, silvery-gray leaves and, in summer, terminal clusters of bright yellow flower heads. Useful for a rock garden or an alpine house. Z3–7

T. partheniu, syn. *Chrysanthemum parthenium*, *Pyrethrum parthenium* (Feverfew), illus. p.300. **'Aureum'** is a short-lived, bushy perennial, grown as an annual. H and S 8–18in (20–45cm). Has ovate, lobed, aromatic, green-gold leaves and, in summer and early fall, daisylike, white flower heads. Z3–7

TANAKAEA

SAXIFRAGACEAE

Genus of one species of evergreen, spreading perennial, grown for its foliage and flowers. Suitable for rock gardens and

woodland. Fully hardy. Needs partial shade and moist, humus-rich, peaty soil. Propagate by runners in spring.
***T. radicans*.** Evergreen, dense, basal-rosetted perennial. H 2½–3in (6–8cm), S 8in (20cm). Leaves are narrowly ovate to heart-shaped, leathery, and mid- to dark green. Bears small panicles of tiny, outward-facing, star-shaped, white flowers in late spring. Z6–8

TAPEINOCHILOS

COSTACEAE/ZINGIBERACEAE

Genus of mostly evergreen perennials, grown for their colorful, leaflike bracts. Frost tender. Needs high humidity, partial shade, and humus-rich soil. Not easy to grow successfully in pots. Propagate by division in spring. Red spider mite may be a problem with container-grown plants.
***T. ananassae*.** Evergreen, tufted perennial. H to 6ft (2m), S 2½ft (75cm). Non-flowering stems are erect and unbranched, with narrowly obovate, long-pointed leaves, to 6in (15cm) long. Flowering stems are leafless, to over 3ft (1m) long, and, in summer, bear ovoid, dense spikes, 6in (15cm) or more long, of small, tubular, yellow flowers. Showy, recurved, hard, scarlet bracts enclose and almost hide flowers. Z12 (min. 68°F/20°C)

TASMANNIA

WINTERACEAE

Genus of evergreen trees and shrubs, grown for their aromatic leaves and star-shaped flowers. Frost hardy. Needs sun or partial shade and fertile, moist but well-drained soil. Propagate by semiripe cuttings in summer or by seed in fall.
T. lanceolata, syn. *Drimys aromatica*, *D. lanceolata* (Mountain pepper), illus. p.197.

TAXODIUM

TAXODIACEAE

See also CONIFERS.
T. distichum (Swamp cypress) illus. p.99.

TAXUS

TAXACEAE

☠ All parts (but not the seed coating) are highly toxic if ingested. See also CONIFERS.
T. baccata (Yew). Slow-growing conifer with a broadly conical, later dome-shaped crown. H 30–50ft (10–15m), S 15–30ft (5–10m) Needlelike, flattened leaves are dark green. Female plants bear cup-shaped, fleshy, bright red fruits; only the red part, not the seed, is edible. Will regrow if cut back. The following forms are H 20–30ft (6–10m), S 15–25ft (5–8m) unless otherwise stated. Z5–7. **'Adpressa'** is a shrubby, female form with short, broad leaves. **Aurea Group** (syn. *T.b.* 'Aurea') has golden-yellow foliage. **'Dovastoniana'** is spreading, with weeping branchlets. **'Dovastonii Aurea'** (illus. p.105) is similar to *T.b.* 'Dovastoniana', but has golden shoots and yellow-margined leaves. **'Fastigiata'** (Irish yew) illus. p.101. **Fastigiata Aurea Group** (syn. *T.b.* 'Fastigiata Aurea') is similar to *T.b.* 'Fastigiata', but has gold-variegated leaves. **'Lutea'** (Yellow-berried yew) illus. p.102. **'Repandens'**, H 2ft (60cm), S 15ft (5m), is a spreading form.
'Semperaurea', H 10ft (3m), S 15ft (5m), has ascending branches with dense, golden foliage.
T. cuspidata (Japanese yew) illus. p.104. **'Aurescens'** is a spreading, bushy, dwarf conifer. H 1ft (30cm), S 3ft (1m). Hardier than *T. baccata* forms. Needlelike, flattened leaves are deep golden-yellow in their first year and mature to dark green. **'Capitata'**, H 30ft (10m), S 6ft (2m), is upright in habit. **'Densa'**, H 4ft (1.2m), S 20ft (6m), is a female form with short, erect shoots. Z4–7
***T.* x *media*.** Dense conifer that is very variably shaped. H and S 10–20ft (3–6m). Has needlelike, flattened leaves, spreading either side of olive-green shoots. Leaves are stiff, broad, and widen abruptly at the base. Fruits are similar to those of *T. baccata*. Z4–7. **'Brownii'**, H 8ft (2.5m), S 11ft (3.5m), is a dense, globose form with dark green foliage. **'Densiformis'**, H 6–10ft (2–3m), is dense and rounded, with a mass of shoots that have bright green leaves. **'Hicksii'**, H to 20ft (6m), is columnar and has ascending branches. Male and female forms exist. **'Hillii'**, H and S 10ft (3m), is a broadly conical to rounded, dense bush with glossy, green leaves. **'Wardii'**, H 6ft (2m), S 20ft (6m), is a flat, globose, female form.

TECOMA

SYN. TECOMARIA

BIGNONIACEAE

Genus of mainly evergreen climbers, shrubs, and trees, grown for their flowers from spring to fall. Frost tender. Prefers moist but well-drained soil and full light. Water potted specimens moderately, and hardly at all in winter. May be pruned annually after flowering to maintain as a shrub. Propagate by seed in spring or by semiripe cuttings in summer. Red spider mite may be troublesome.
***T. australis*.** See *Pandorea pandorana*.
T. capensis, syn. *Bignonia capensis*, *Tecomaria capensis* (Cape honeysuckle). Evergreen, scrambling climber, shrublike when young. H 6–10ft (2–3m). Leaves have 5–9 rounded, serrated, glossy, dark green leaflets. Tubular, orange-red flowers are borne in short spikes, in spring–summer. Z10–12 (min. 41°F/5°C). **'Aurea'** (syn. *Tecomaria capensis* 'Aurea') illus. p.464.
***T. grandiflora*.** See *Campsis grandiflora*.
***T. radicans*.** See *Campsis radicans*.
***T. ricasoliana*.** See *Podranea ricasoliana*.
T. stans, syn. *Bignonia stans*, *Stenolobium stans* (Yellow bells, Yellow elder), illus. p.452.

TECOMANTHE

BIGNONIACEAE

Genus of evergreen, twining climbers, grown for their flowers. Frost tender. Needs humus-rich, well-drained soil and light shade in summer. Water freely when in full growth, less at other times. Provide stems with support. Thin out crowded stems in spring. Propagate by seed in spring or by semiripe cuttings in summer.
***T. speciosa*.** Strong-growing, evergreen, twining climber. H to 30ft (10m) or more. Has pinnate leaves with 3 or 5 ovate, thick lustrous, deep green leaflets. Bears dense clusters of foxglovelike, fleshy-textured, cream flowers, tinged green, in fall. Z11–12 (min. 55–59°F/13–15°C)

TECOPHILAEA

TECOPHILAEACEAE/LILIACEAE

Genus of spring-flowering corms, rare in cultivation, grown for their beautiful flowers. Frost hardy, but because of rarity, usually grown in a cold frame or cold greenhouse. Needs sun and well-drained soil. Water in winter and spring. Keep corms dry, but not sunbaked, from early summer to fall, then replant. Propagate in fall by seed or offsets.
T. cyanocrocus (Chilean blue crocus) illus. p.420. **var. *leichtlinii*** (syn. *T.c.* 'Leichtlinii') illus. p.420.

***Telanthophora grandifolia*.**
See *Senecio grandifolius*.

TELEKIA

ASTERACEAE/COMPOSITAE

Genus of summer-flowering perennials, grown for their bold foliage and large flower heads. Fully hardy. Grows in sun or shade and in moist soil. Propagate by division in spring or by seed in fall.
T. speciosa, syn. *Buphthalmum speciosum*. Upright, spreading perennial. H 4–5ft (1.2–1.5m), S 3–4ft (1–1.2m). Mid-green leaves are heart-shaped at base of plant, ovate on stems. In late summer, branched stems bear large, daisylike, rich gold flower heads. Ideal for a pool side or woodland. Z3–7

***Telesonix jamesii*.**
See *Boykinia jamesii*.

TELLIMA

SAXIFRAGACEAE

Genus of one species of semievergreen, late spring-flowering perennial. Provides good groundcover and is ideal for cool, partial shaded woodland gardens and beneath shrubs in sunny borders. Fully hardy. Grows in any well-drained soil. Propagate by division in spring or by seed in fall.
T. grandiflora (Fringecups). Semi-evergreen, rosette-forming perennial. H and S 2ft (60cm). Has heart-shaped, toothed, hairy, purple-tinted, bright green leaves. Bears racemes of small, bell-shaped, fringed, cream flowers, well above foliage, in late spring. Z4–7. **Rubra Group** (syn. *T.g.* 'Purpurea', *T.g.* 'Rubra Group') illus. p.279.

TELOPEA

PROTEACEAE

Genus of evergreen trees and shrubs, grown mainly for their flower heads. Frost hardy to frost tender. Requires full sun or partial shade and humus-rich, moist but well-drained, neutral to acidic soil. Water containerized plants freely when in full growth, moderately at other times. Propagate by seed in spring or by layering in winter.
T. speciosissima (Waratah) illus. p.137.
T. truncata (Tasmanian waratah) illus. p.123.

TEMPLETONIA

PAPILIONACEAE/LEGUMINOSAE

Genus of evergreen shrubs, grown for their flowers. Frost tender. Prefers full light and freely draining, alkaline soil. Water potted specimens moderately, less in winter. Propagate by seed in spring or by semiripe cuttings taken in summer.
T. retusa (Coral bush). Evergreen, erect, irregularly branched shrub. H 6ft (2m), S 3–5ft (1–1.5m). Has ovate to elliptic, leathery, bluish-green leaves. Pealike, red flowers, sometimes pink or cream, are produced in spring–summer. Z10–12 (min. 41–45°F/5–7°C)

TERMINALIA

COMBRETACEAE

Genus of deciduous and evergreen trees, grown for their overall appearance, edible seeds (nuts), and for shade. Frost tender. Requires full light and well-drained soil. Water potted specimens moderately, scarcely at all when temperatures are low. Pruning is seldom necessary. Propagate by seed in spring.
T. catappa (Indian almond, Tropical almond). Evergreen, rounded tree. H and S 50ft (15m) or more. Has broadly ovate, lustrous, green leaves at stem tips. Small, greenish-white flowers are borne in spring, followed by flattened ovoid, keeled, green to red fruits, each with an edible seed. Z11–12 (min. 55–59°F/13–15°C)

TERNSTROEMIA

PENTAPHYLLACACEAE

Genus of evergreen trees and shrubs, grown for their overall appearance. Frost hardy to frost tender. Requires full sun or partial shade and humus-rich, well-drained, neutral to acidic soil. Water containerized specimens copiously when in full growth, moderately at other times. Prune in spring. Propagate by seed when ripe or in spring, or take semiripe cuttings in late summer.
T. gymnanthera, syn. *T. japonica*. Evergreen, rounded, dense shrub. H and S 6ft (2m). Ovate leaves are lustrous, mid- to deep green. In summer, pendent, 5-petaled, white flowers are borne singly from leaf axils. Pea-sized, berrylike, bright red fruits are produced in fall. Z7–10. Leaves of **'Variegata'** are white-bordered with a pink tinge.
***T. japonica*.** See *T. gymnanthera*.

***Testudinaria elephantipes*.**
See *Dioscorea elephantipes*.

TETRACENTRON

TROCHODENDRACEAE

Genus of one species of deciduous tree, grown for its foliage and catkins. Fully hardy. Needs sun or partial shade and fertile, well-drained soil. Propagate by seed in fall.

T. sinense. Deciduous, spreading tree with a graceful habit. H and S 30ft (10m) or more. Bears ovate, finely toothed, dark green leaves and long, slender, yellow catkins in early summer. Z6–7

TETRADIUM

SYN. EUODIA, EVODIA

RUTACEAE

Genus of deciduous or evergreen trees and shrubs, grown for their foliage, late flowers, and fruits. Fully hardy to frost tender. Needs full sun and fertile, well-drained soil. Propagate by softwood cuttings in summer, by seed in fall, or by root cuttings in late winter.
T. daniellii, syn. *Euodia hupehensis*. Deciduous, spreading tree. H and S 50ft (15m). Ashlike, dark green leaves, with 5–11 ovate to oblong leaflets, turn yellow in fall. In early fall, bears small, fragrant, 5-petaled, white flower clusters, then beaked, red-brown to black fruits. Z4–8

TETRANEMA

PLANTAGINACEAE

Genus of shrubby, evergreen perennials, grown for their trumpet-shaped flowers in summer. Frost tender. Grow in a light position, shaded from direct sunlight, and in well-drained soil; avoid waterlogging and a humid atmosphere. Propagate by division, or seed if available, in spring.
T. mexicanum. See *T. roseum*.
T. roseum, syn. *T. mexicanum* (Mexican violet), illus. p.472.

TETRAPANAX

ARALIACEAE

Genus of one species of evergreen, summer- to fall-flowering shrub or small tree, grown for its foliage. Frost hardy. Requires full sun or partial shade and humus-rich, moist but well-drained soil. Water containerized specimens freely, less in winter. Leggy stems may be cut back to near ground level in winter. Propagate by suckers or seed in early spring. Severe frosts can cause stems to die back but they will regrow in spring
T. papyrifer, syn. *Fatsia papyrifera* (Rice-paper plant), illus. p.120.

TETRASTIGMA

VITACEAE

Genus of evergreen and deciduous, woody-stemmed, tendril climbers, grown for their handsome leaves. Frost tender. Grow in any fertile, well-drained soil, with shade in summer. Water freely while in active growth, less in winter. Provide stems with support; cut out crowded stems in spring. Propagate by layering in spring or by semiripe cuttings in summer.
T. voinierianum, syn. *Cissus voinieriana* (Chestnut vine), illus. p.463.

TEUCRIUM

LAMIACEAE/LABIATAE

Genus of evergreen or deciduous shrubs, subshrubs, and perennials, grown for their flowers, foliage (sometimes aromatic) or habit. Fully to frost hardy. Needs full sun and well-drained soil. Propagate shrubs and subshrubs by softwood or semiripe cuttings in summer, perennials by seed, or division in spring.
T. aroanium. Evergreen, procumbent, much-branched subshrub. H 1in (2.5cm), S 4–6in (10–15cm). Has white-haired twigs and oblong to ovate, slightly hairy leaves, which are densely hairy below. Whorls of small, tubular, 2-lipped, purple flowers are borne in summer. Good for a trough. Z9–11
T. fruticans (Shrubby germander, Tree germander). **'Azureum'** is an evergreen, arching shrub. H 6ft (2m), S 12ft (4m). Has ovate, aromatic, gray-green leaves, white beneath. In summer, bears tubular, 2-lipped, deep blue flowers with prominent stamens. Cut out dead wood in spring. Z8–10
T. polium illus. p.366.

THALIA

MARANTACEAE

Genus of deciduous, perennial, marginal water plants, grown for their foliage and flowers. Frost hardy to frost tender. Needs an open, sunny position in water up to 1½ft (45cm) deep. Some species tolerate cool water. Remove fading foliage. Propagate in spring by division or seed.
T. dealbata. Deciduous, perennial, marginal water plant. H 5ft (1.5m), S 2ft (60cm). Ovate, long-stalked, blue-green leaves have a mealy, white covering. Spikes of narrowly tubular, violet flowers in summer are followed by decorative seed heads. Tolerates cool water. Z9–11
T. geniculata. Deciduous, perennial, marginal water plant. H 6ft (2m), S 2ft (60cm). Has ovate, long-stalked, blue-green leaves and, in summer, spikes of narrowly tubular, violet flowers. Needs a warm pool. Z10–12 (min. 41–50°F/5–10°C)

THALICTRUM

Meadow rue

RANUNCULACEAE

Genus of perennials, grown for their divided foliage and fluffy flower heads. Flowers lack petals, but have prominent tufts of stamens and 4 or 5 sepals, which rapidly fall. Does well at edges of woodland gardens. Tall species and cultivars are excellent foils in borders for perennials with bolder leaves and flowers. Fully hardy to frost tender. Requires sun or light shade. Grows in any well-drained soil, although some species prefer cool, moist conditions. Propagate by seed when fresh, in fall, or by division in spring.
T. aquilegiifolium illus. p.239. **'Album'**, is an erect, clump-forming perennial. H 3–4ft (1–1.2m), S 1ft (30cm). Has 2- or 3-pinnate, grayish-green leaves with wavy-margined leaflets. In summer, bears dense, terminal panicles of fluffy, white flowers on erect stems. Z5–8.
'Thundercloud' illus. p.233.
T. chelidonii. Clump-forming perennial. H 3–5ft (1–1.5m), S 2ft (60cm). Has finely divided, pinnate, mid-green leaves and, in summer, bears panicles of fluffy, 4- or 5-sepaled, mauve flowers. Prefers cool soil that does not dry out. Z5–8
T. delavayi, syn. *T. dipterocarpum* of gardens. Elegant, clump-forming perennial. H 5–6ft (1.5–2m), S 2ft (60cm). Finely divided, pinnate leaves and stems become purple tinged with age. Bears large panicles of nodding, lilac flowers, with 4 or 5 sepals and prominent, yellow stamens, from mid- to late summer. Z4–7. **'Hewitt's Double'** illus. p.220. **SPLENDIDE WHITE ('Fr21034')**, H 5ft (1.5m), has flowers with creamy-yellow stamens.
T. diffusiflorum. Clump-forming perennial. H 3ft (1m), S 1–2ft (30–60cm). Has much-divided, pinnate, basal, grayish-green leaves, with almost circular leaflets. In summer, bears loose panicles of fluffy flowers with mauve petals and much shorter, pendent yellow stamens. Prefers cool, moist soil. Z4–7
T. dipterocarpum of gardens. See *T. delavayi*.
***T.* 'Elin'** illus. p.218.
T. flavum. Clump-forming perennial. H 4–5ft (1.2m–1.5m), S 2ft (60cm). Has 2- or 3-pinnate, glaucous blue-green leaves. In summer, bears clusters of numerous, fragrant, fluffy flowers with small, yellow petals and longer, erect, bright yellow stamens. Z4–7. **'Illuminator'** has pale yellow flowers and bright green foliage.
T. kiusianum. Mat-forming perennial with short runners. H 3in (8cm), S 6in (15cm). Has small, fernlike, dark blue-green leaves. In summer, bears loose, few-flowered clusters of tiny, pale pinkish mauve flowers with conspicuous stamens. Thrives in a shady site in moist, peaty soil in a rock garden, trough or alpine house. Difficult to grow in hot, dry areas. Z4–6
T. lucidum, *syn. T. angustifolium*. Erect perennial. H 3–4ft (1–1.2m), S 20in (50cm). Has 2- or 3-pinnate, glossy, dark green leaves comprising numerous leaflets. Stout stems bear loose, upright panicles of fluffy, greenish-yellow flowers in summer. Z4–7
T. orientale. Spreading perennial with short runners. H 6in (15cm), S 8in (20cm). Leaves are fernlike with ovate to rounded, lobed leaflets. Produces small, saucer-shaped, blue-mauve to violet flowers, with yellow stamens and large sepals, in late spring. Z6–8

THAMNOCALAMUS

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
***T. crassinodus* var. *spathiflorus* 'Kew Beauty'** illus. p.286.
T. falconeri. See *Himalayacalamus falconeri*.
***T. spathaceus* of gardens.** See *Fargesia murieliae*.

THELOCACTUS

CACTACEAE

Genus of spherical to columnar, perennial cacti with ribbed or tuberculate stems. Elongated areoles in crowns produce funnel-shaped flowers. Frost tender. Requires sun and well-drained soil. Propagate by seed in spring or summer.
T. bicolor illus. p.484.
T. leucacanthus. Clump-forming, perennial cactus. H 4in (10cm), S 1ft (30cm). Spherical to columnar, green stem has 8–13 tuberculate ribs. Areoles bear up to 20 short, golden spines and yellow flowers, 2in (5cm) across, in summer. Z10–11 (min. 41°F/5°C)
T. macdowellii, syn. *Echinomastus macdowellii, Neolloydia macdowelli*. Spherical, perennial cactus. H and S 6in (15cm). Has a tuberculate, dark green stem densely covered with white spines, to 1¼in (3cm) long. Violet-red flowers, 1½in (4cm) across, are borne in spring–summer. Z10–11 (min. 41°F/5°C)
T. setispinus, syn. *Ferocactus setispinus*, illus. p.495.

THELYPTERIS

THELYPTERIDACEAE

Genus of deciduous ferns. Fully to frost hardy. Tolerates sun or partial shade. Grow in moist or very moist soil. Remove fading fronds regularly. Propagate by division in spring.
T. palustris (Marsh buckler fern, Marsh fern) illus. p.291.

THERMOPSIS

PAPILIONACEAE/LEGUMINOSAE

Genus of summer-flowering perennials, grown for their attractive foliage and lupinlike flowers. Fully hardy. Prefers sun and rich, light soil. Propagate by division in spring or by seed in fall.
T. caroliniana. See *T. villosa*.
T. montana. See *T. rhombifolia*.
T. rhombifolia, syn. *T. montana*, illus. p.243.
T. villosa, syn. *T. caroliniana*. Scandent perennial. H 3ft (1m) or more, S 2ft (60cm). Bears racemes of pealike, yellow flowers in late summer. Glaucous leaves are divided into 3 ovate leaflets. Z4–9

THESPESIA

MALVACEAE

Genus of mainly evergreen shrubs and trees, grown for their flowers. Frost tender. Needs a site in full light and well-drained soil. Water potted plants freely when in full growth, less at other times of the year. Prune in early spring to maintain as a shrub. Propagate by seed in spring or by semiripe cuttings in summer. Whitefly and red spider mite may be a nuisance.
T. populnea (Mahoe, Portia oil nut). Evergreen tree, bushy when young, but thinning with age. H 40ft (12m) or more, S 10–20ft (3–6m). Leaves are heart-shaped. Intermittently, or all year round if temperatures are sufficiently high, bears cup-shaped, yellow flowers, each with a maroon eye, that age to purple. Grows well in coastal gardens. Z11–12 (min. 55–59°F/13–15°C)

THEVETIA

APOCYNACEAE

Genus of evergreen shrubs and trees, grown for their flowers from winter to summer. Related to *Frangipani*. Frost tender. Needs full light and well-drained soil. Water containerized specimens moderately, less in winter. Young stems may be tip pruned in winter to promote branching. Propagate by seed in spring or by semiripe cuttings in summer.
① The seeds are highly toxic if ingested. Milky sap is also poisonous.
T. neriifolia. See *T. peruviana*.

T. peruviana, syn. *T. neriifolia* (Yellow oleander). Evergreen, erect tree. H 6–25ft (2–8m), S 3–10ft (1–3m). Has narrow, lance-shaped, rich green leaves and funnel-shaped, yellow or orange-yellow flowers from winter to summer. Z11–12 (min. 55–59°F/13–15°C)

THLADIANTHA

CUCURBITACEAE

Genus of annual or perennial herbaceous, deciduous, tendril climbers, grown for their bell-shaped, yellow flowers and ovate to heart-shaped, mid-green leaves. Fully to half hardy. Requires a sheltered position in full sun and fertile, well-drained soil. Propagate by seed sown in spring or by division in early spring.
T. dubia illus. p.206.

THLASPI

BRASSICACEAE/CRUCIFERAE

Genus of annuals, biennials, and short-lived perennials, some evergreen, grown for their flowers. Remove buds for the first 2 years, to encourage a large plant. Difficult to grow at low altitudes and may need frequent renewal from seed. Good for screes and troughs. Fully hardy. Needs sun and moist but well-drained soil. Propagate by seed in fall.
T. alpestre of gardens. See *T. alpinum*.
T. alpinum, syn. *T. alpestre* of gardens (Alpine penny-cress). Evergreen, mat-forming perennial. H 2in (5cm), S 4in (10cm). Has small, ovate, mid-green leaves. Produces racemes of small, 4-petaled, white flowers in spring. Z5–9
T. bulbosum. Clump-forming, tuberous perennial. H 3in (8cm), S 6–8in (15–20cm). Bears broadly ovate, glaucous leaves and, in summer, racemes of 4-petaled, dark violet flowers. Suits a rock garden. Z5–9
T. cepaeifolium* subsp. *rotundifolium, syn. *T. rotundifolium*, illus. p.352.
T. macrophyllum. See *Pachyphragma macrophyllum*.
T. rotundifolium. See *T. cepaeifolium* subsp. *rotundifolium*.

THUJA

CUPRESSACEAE

① Contact with the foliage may aggravate skin allergies. See also CONIFERS.
T. koraiensis (orean thuja). Upright conifer, sometimes spreading and shrublike. H 10–30ft (3–10m), S 10–15ft (3–5m). Scalelike foliage is bright green or yellow-green above, glaucous silver beneath, and smells of almonds if crushed. Z5–8
T. occidentalis (American arbor-vitae, Eastern white cedar, White cedar). Slow-growing conifer with a narrow crown. H 50ft (15m), S 10–15ft (3–5m). Has orange-brown bark and flat sprays of scalelike, yellowish-green leaves, pale or grayish-green beneath, smelling of apples when crushed. Ovoid cones are yellow-green, ripening to brown. Z2–7.
'Danica', H 20in (50cm), S 2ft (60cm), is a near-spherical shrub, with bright green foliage borne in tightly packed sprays.
'Filiformis', H 5ft (1.5m), S 5–6ft (1.5–2m), forms a mound with pendent, whiplike shoots. **'Golden Globe'**, H and S 3ft (1m), is a dwarf, spherical shrub, with bright golden-yellow leaves. **'Hetz Midget'**, H and S 20in (50cm), growing only 1in (2.5cm) each year, is a globose, dwarf form with blue-green foliage. **'Holmstrup'**, H 10–12ft (3–4m), S 3ft (1m), is a slow-growing, dense, conical bush with vertical sprays of rich green foliage. **'Lutea Nana'**, H 6ft (2m), S 3–6ft (1–2m), is a dwarf form with golden-yellow foliage. **'Rheingold'**, H 10–12ft (3–4m), S 6–12ft (2–4m), is slow-growing, with golden-yellow foliage that becomes bronze in winter. **'Smaragd'**, H 6–8ft (2–2.5m), S 2–2½ft (60–75cm), is slow-growing and conical, with erect sprays of bright green leaves. **'Spiralis'**, H 30–50ft (10–15m), S 6–10ft (2–3m), has foliage in twisted, fernlike sprays. **'Sunkist'**, H 12ft (4m), S 5ft (1.5m), is slow-growing and conical, with golden foliage tinged purple in winter. **'Wansdyke Silver'**, H 5ft (1.5m), S 2ft (60cm), is dwarf and conical, with variegated, silver-white leaves.
T. orientalis. See *Platycladus orientalis*.
T. plicata (Western red cedar). Fast-growing, conical conifer that has great, curving branches low down. H 70–100ft (20–30m), S 15–25ft (5–8m), greater if lower branches self-layer. Has red-brown bark, scalelike, glossy, dark green leaves, which have a pineapple aroma when crushed, and erect, ovoid, green cones, ripening to brown. Z5–7.
'Atrovirens' has darker green foliage.
'Aurea' has golden-yellow foliage.
'Collyer's Gold', H to 6ft (2m), S 3ft (1m), is a dwarf form with yellow, young foliage turning light green. **'Cuprea'**, H 3ft (1m), S 2½–3ft (75cm–1m), is a conical shrub with copper- to bronze-yellow leaves.
'Hillieri', H and S to 3ft (1m), is a slow-growing, dense, rounded, dwarf shrub with mosslike, rich green foliage.
'Stoneham Gold' (illus. p.105), H 3–6ft (1–2m), S 3ft (1m), is a conical, dwarf form with bright gold foliage.
'Zebrina', H 50ft (15m), has leaves banded with yellowish-white.

THUJOPSIS

CUPRESSACEAE

See also CONIFERS.
T. dolabrata (Hiba). Conical or bushy conifer with a mass of stems. H 30–70ft (10–20m), S 25–30ft (8–10m). Produces heavy, flat sprays of scalelike leaves, glossy, bright green above, silvery-white beneath. Small, rounded cones are blue-gray. Z5–7. **'Variegata'** produces stout, hatchet-shaped leaves with irregular, creamy patches on the upper surface, silvery beneath.

THUNBERGIA

ACANTHACEAE

Genus of annual or mainly evergreen, perennial, twining climbers, perennials and shrubs, grown for their flowers. Frost tender. Any fertile, well-drained soil is suitable, with full sun or light shade in summer. Water freely when in full growth, less at other times. Requires support. Thin out crowded stems in early spring. Propagate by seed in spring or from softwood or semiripe cuttings in summer.
T. alata (Black-eyed Susan) illus. p.207.
'African Sunset' is a vigorous twining climber, usually grown as an annual. H 6ft (2m). In early summer to early fall, bears rounded flowers in red, orange, pink, cream, and yellow, with dark brown centers. Individual flowers change color as they age. Suits a hanging basket. Z10–12 (min. 45–50°F/7–10°C)
T. coccinea. Evergreen, woody-stemmed, perennial, twining climber with narrowly ovate leaves. H 20ft (6m) or more. From winter to spring, bears pendent racemes of tubular, scarlet flowers. Z11–12 (min. 50–55°F/10–13°C)
T. gibsonii. See *T. gregorii*.
T. grandiflora (Blue trumpet vine). Evergreen, woody-stemmed, perennial, twining climber. H 20–30ft (6–10m). Ovate leaves, 4–8in (10–20cm) long, have a few toothlike lobes. In summer, bears trumpet-shaped, pale to deep violet-blue flowers. Z11–12 (min. 50–55°F/10–13°C)
T. gregorii, syn. *T. gibsonii*. Evergreen, woody-stemmed, twining climber, usually grown as an annual. H to 10ft (3m). Triangular-ovate leaves have winged stalks. Glowing orange flowers are produced in summer. Z11–12 (min. 50–55°F/10–13°C)
T. mysorensis illus. p.464.

THYMUS

Thyme

LAMIACEAE/LABIATAE

Genus of evergreen, mat-forming and dome-shaped shrubs, subshrubs, and woody-based perennials with aromatic leaves. Useful for growing on banks and in rock gardens, troughs, and paving. Commonly grown as a culinary herb, it is also suitable for containers. Fully hardy. Requires sun and well-drained soil. Propagate by seed in spring, or softwood or semiripe cuttings taken in summer.
T. azoricus. See *T. caespititius*.
***T.* 'Bressingham'** illus. p.365.
T. caespititius, syn. *T. azoricus, T. cilicicus,* illus. p.366.
***T.* x *citriodorus* 'Silver Queen'.** See *T.* 'Silver Queen'.
T. cilicicus. See *T. caespititius*.
T. herba-barona (Caraway thyme). Evergreen subshrub. H in flower 2–4in (5–10cm), S to 8in (20cm). Forms a loose mat of tiny, caraway-scented, dark green leaves. In summer, small, lilac flowers are borne in terminal clusters. Z4–8
T. micans. See *T. caespititius*.
***T.* 'Peter Davis'**, syn. *T. leucotrichus* of gardens, illus. p.367.
***T.* 'Porlock'.** Evergreen, dome-shaped perennial. H 3in (8cm), S 8in (20cm). Thin stems are covered in small, rounded to ovate, very aromatic, glossy, green leaves. In summer, produces clusters of small, 2-lipped, pink flowers. Z5–8
T. pseudolanuginosus. Evergreen, prostrate shrub. H 1–2in (2.5–5cm), S 8in (20cm) or more. Has dense mats of very hairy stems bearing tiny, aromatic, gray leaves. Produces 2-lipped, pinkish-lilac flowers in leaf axils in summer. Z5–8
***T. pulegioides* 'Aureus'.** Evergreen, spreading shrub. H 4in (10cm), S 4–10in (10–25cm). Tiny, rounded to ovate, golden-yellow leaves are very fragrant when crushed. Produces terminal clusters of small, 2-lipped, lilac flowers in summer. Cut back in spring. Z4–8. **'Bertram Anderson'** has gray-green leaves, strongly suffused yellow.
T. serpyllum. Evergreen, mat-forming subshrub. H 10in (25cm), S 1½ft (45cm). Finely hairy, trailing stems bear linear to elliptic to ovate, mid-green leaves. Whorls of 2-lipped, purple flowers are borne in summer. Z4–8. **'Annie Hall'**, H 2in (5cm), S 8in (20cm), has pale purple-pink flowers and light green leaves. **'Elfin'**, H 2in (5cm), S 4in (10cm), bears emerald-green leaves in dense hummocks; occasionally bears purple flowers. **'Pink Chintz'** has gray-green leaves and flesh-pink flowers.
***T.* 'Silver Queen'**, syn. *T. citriodorus* 'Silver Queen'. Evergreen, rounded shrub. H to 1ft (30cm), S to 10in (25cm). Has narrow, ovate-diamond-shaped to lance-shaped, more or less hairless, aromatic, silvery-green leaves, with creamy-white markings. In summer, produces 2-lipped, pale lavender-pink flowers in terminal clusters. Z5–8

TIARELLA

Foamflower

SAXIFRAGACEAE

Genus of rhizomatous herbaceous or semievergreen perennials. Excellent as groundcover. Fully hardy. Tolerates deep shade and prefers moist, well-drained soil. Suitable for woodland gardens. Propagate by division in spring. Slugs and vine weevils may be a problem.
T. cordifolia (Foamflower) illus. p.333.
var. *collina* see *T. wherryi*.
***T.* 'Iron Butterfly'.** Vigorous, clump-forming, semievergreen, rhizomatous perennial. H to 16in (40cm), S 1ft (30cm). Has palmate, deeply cut, bright green leaves, to 3in (7cm) long, marked dark blackish maroon centrally along each lobe. In spring, bears pale pinkish-white flowers in bottlebrushlike racemes. Z4–9
***T.* 'Mint Chocolate'.** Clump-forming, semievergreen perennial. H 16in (40cm), S 1ft (30cm). Has palmate, deeply lobed, bright green leaves, each with a central lobe elongated to 3in (8cm) long; leaves are marked dark maroon-purple centrally along each lobe. In spring, bears spikes of ivory-white flowers. Z4–9
T. wherryi, syn. *T. cordifolia* var. *collina*. Slow-growing, clump-forming perennial. H 4in (10cm), S 6in (15cm). Triangular, lobed, hairy, basal, green leaves, with heart-shaped bases, are stained dark red. Bears racemes of tiny, star-shaped, soft pink or white flowers from late spring to early summer. Z5–9

TIBOUCHINA

MELASTOMATACEAE

Genus of evergreen perennials, subshrubs, shrubs, and scandent climbers, grown for their flowers and leaves. Frost tender. Prefers full sun and fertile, well-drained, neutral to acidic soil. Water potted specimens freely when in full growth, moderately at other times. Cut flowered stems back to 2 pairs of buds each, in spring. Tip prune young plants to promote branching. Propagate by greenwood or

semiripe cuttings in late spring–summer.
T. semidecandra of gardens. See *T. urvilleana*.
T. urvilleana, syn. *T. semidecandra* of gardens (Glory bush), illus. p.457.

TIGRIDIA

SYN. RIGIDELLA

IRIDACEAE

Genus of summer-flowering bulbs, grown for their highly colorful but short-lived flowers, rather irislike in shape, with 3 large, outer petals. Frost hardy to frost tender. Needs sun and well-drained soil, with ample water in summer. Plant in spring. Lift in fall; then partially dry bulbs and store in peat or sand at 46–54°F (8–12°C). Propagate by seed in spring.
T. pavonia (Peacock flower, Tiger flower) illus. p.413.

TILIA

Lime, Linden

MALVACEAE

Genus of deciduous trees, grown for their foliage, small, fragrant, cup-shaped flowers, and stately habit. Flowers attract bees, but are toxic to them in some cases. Flowers are followed by dry, nutlike fruits. Fully hardy. Requires sun or partial shade and fertile, well-drained soil. Propagate species by seed in fall, selected forms and hybrids by grafting in late summer. Except for *T.* x *euchlora*, trees are usually attacked by aphids, which cover growth and the ground beneath with sticky honeydew. ⓘ The nectar of *T* x *europaea*, *T.* x *euchlora*, *T. tomentosa* and *T. tomentosa* 'Petiolaris' may be toxic, especially to bumblebees.
T. americana (American lime, Basswood). Deciduous, spreading tree. H 80ft (25m), S 40ft (12m). Has large, rounded, sharply toothed, glossy, dark green leaves and produces small, yellowish-white flowers in summer. Z2–8
T. cordata (Small-leaved lime). Deciduous, spreading tree. H 100ft (30m), S 40ft (12m). Has small, glossy, dark green leaves and produces small, yellowish-white flowers in midsummer. Z3–7.
'Greenspire', S 25ft (8m), is very vigorous and pyramidal in habit, even when young.
'Winter Orange' has red buds and orange young shoots in winter, and butter-yellow fall color; stool or pollard for best effect.
T.* x *euchlora (Caucasian lime, Crimean lime). Deciduous, spreading tree with lower branches that become pendent with age. H 70ft (20m), S 30ft (10m). Rounded, very glossy, deep green leaves turn yellow in fall. Bears small, yellowish-white flowers, which may be toxic to bees, in summer. Relatively pest-free. Z3–8
T.* x *europaea, syn. *T.* x *vulgaris* (Common lime). Vigorous, deciduous, spreading tree. H 120ft (35m), S 50ft (15m). Trunk develops many burs. Has rounded, dark green leaves. Small, yellowish-white flowers, which may be toxic to bees, are borne in summer. Periodically remove shoots from burrs at base. Z3–7
T. henryana. Deciduous, spreading tree. H and S 30ft (10m). Broadly heart-shaped, glossy, bright green leaves, fringed with long teeth, are often tinged red when young. Produces an abundance of small, creamy-white flowers in fall. Z7–9
T. mongolica (Mongolian lime). Deciduous, spreading, graceful tree. H 50ft (15m), S 40ft (12m). Young shoots are red. Heart-shaped, coarsely toothed, glossy, dark green leaves turn yellow in fall. Small, yellowish-white flowers are borne in summer. Z3–6
T. oliveri illus. p.63.
T. petiolaris. See *T. tomentosa* 'Petiolaris'.
***T.* 'Petiolaris'.** See *T. tomentosa* 'Petiolaris'.
T. platyphyllos (Broad-leaved lime, Large-leaved lime). Deciduous, spreading tree. H 100ft (30m), S 70ft (20m). Has rounded, dark green leaves and bears small, dull yellowish-white flowers in midsummer. Z4–6. **'Rubra'** (Red-twigged lime) illus. p.63.
T. tomentosa (European white lime, Silver lime). Deciduous, spreading tree. H 80ft (25m), S 70ft (20m). Leaves are large, rounded, sharply toothed, dark green above and white beneath. Very fragrant, small white flowers, which may be toxic to bees, are borne in late summer. Z4–7.
'Petiolaris' (syn. *T. petiolaris, T.* 'Petiolaris'; Pendent silver lime) illus. p.64.
T.* x *vulgaris. See *T.* x *europaea*.

TILLANDSIA

BROMELIACEAE

Genus of evergreen, epiphytic perennials, often rosette-forming, some with branching stems and spirally arranged leaves, all grown for their flowers or overall appearance. Frost tender. Requires partial shade. Provide a rooting medium of equal parts humus-rich soil and either sphagnum moss or bark. May also be grown on slabs of bark or sections of trees. Using soft water, water moderately in summer, sparingly at other times; spray plants grown on bark or tree sections with water several times a week from mid-spring to mid-fall. Propagate by offsets or division during spring. See also feature panel p.471.
T. argentea (illus. p.471). Evergreen, basal-rosetted, epiphytic perennial. H and S 4–6in (10–15cm). Very narrow, almost threadlike leaves, covered with white scales, are produced in dense, near-spherical rosettes, each with a fleshy, bulblike base. In summer, bears small, loose racemes of tubular, red flowers. Z10–12 (min. 45°F/7°C)
T. caput-medusae. Evergreen, basal-rosetted, epiphytic perennial. H and S 6in (15cm) or more. Linear, channeled, twisted and rolled, incurved leaves, covered in gray scales, develop in loose rosettes that have hollow, bulblike bases. In summer, spikes of tubular, violet-blue flowers are produced above the foliage. Z10–12 (min. 45°F/7°C)
T. cyanea. Evergreen, basal-rosetted, epiphytic perennial. H and S 10in (25cm). Forms dense rosettes of linear, pointed, channelled, arching, usually deep green leaves. In summer, broadly ovate, bladelike spikes of pansy-shaped, deep purple-blue flowers, emerging from pink or red bracts, are produced among foliage. Z11–12 (min. 50°F/10°C)
T. fasciculata. Evergreen, basal-rosetted, epiphytic perennial. H and S 1ft (30cm) or more. Has dense rosettes of narrowly triangular, tapering, arching, mid-green leaves. In summer, flat spikes of tubular, purple-blue flowers emerge from red or reddish-yellow bracts, just above leaf tips. Bracts require strong light to develop reddish tones. Z10–12 (min. 45°F/7°C)
T. ionantha (Sky plant). Evergreen, clump-forming, basal-rosetted, epiphytic perennial. H and S 5in (12cm). Linear, incurved, arching leaves, covered in gray scales, are produced in dense rosettes; the inner leaves turn red at flowering time. Spikes of tubular, violet-blue flowers, emerging in summer from narrow, white bracts, are borne just above foliage. Z10–12 (min. 45°F/7°C)
T. lindenii (Blue-flowered torch; illus. p.471). Evergreen, basal-rosetted, epiphytic perennial. H and S 16in (40cm). Linear, pointed, channeled, arching, mid-green leaves, with red-brown lines, form dense rosettes. In summer, produces bladelike spikes of widely pansy-shaped, deep blue flowers, emerging from sometimes pink-tinted, green bracts, which are borne just above leaves. Z11–12 (min. 50°F/10°C)
T. recurvata. Evergreen, basal-rosetted, epiphytic perennial. H and S 4–8in (10–20cm). Has long, loose, stemlike rosettes of linear, arching to recurved leaves, densely covered in silvery-gray scales. In summer, bears short, dense spikes of small, tubular, pale blue or pale green flowers above the leaves. Z10–12 (min. 45°F/7°C)
T. stricta (illus. p.471). Evergreen, clump-forming, basal-rosetted, epiphytic perennial. H and S 8–12in (20–30cm). Narrowly triangular, tapering, arching, mid-green leaves, usually with gray scales, are produced in dense rosettes. Large, tubular, blue flowers emerge from pendant, conelike spikes of brightred bracts, usually in summer. Z10–12 (min. 45°F/7°C)
T. usneoides (Spanish moss). Evergreen, pendent, epiphytic perennial. H 3ft (1m) or more, S 4–8in (10–20cm). Slender, branched, pendant stems bear linear, incurved leaves, densely covered in silvery-white scales. Inconspicuous, tubular, greenish-yellow or pale blue flowers, hidden among foliage, are borne in summer. Z10–12 (min. 45°F/7°C)

TITANOPSIS

AIZOACEAE

Genus of short-stemmed, basal-rosetted, perennial succulents eventually forming small, dense clumps. Produces 6–8 opposite pairs of fleshy, triangular leaves, ¾–1¼in (2–3cm) long, narrow at stems and expanding to straight tips. Frost tender. Requires a position in sun and well-drained soil. Propagate by seed in spring or summer.
T. calcarea illus. p.496.
T. schwantesii. Clump-forming, perennial succulent. H 1¼in (3cm), S 4in (10cm). Has a basal rosette of triangular, gray-blue leaves, covered with small, wartlike, yellow-brown tubercles. Bears daisylike, light yellow flowers, ¾in (2cm) across, in summer–fall. Z10–11 (min. 41°F/5°C)

TITHONIA

ASTERACEAE/COMPOSITAE

Genus of annuals. Half hardy. Grow in sun and in fertile, well-drained soil. Provide support and deadhead regularly. Propagate by seed sown under glass in late winter or early spring.
T. rotundifolia (Mexican sunflower).
'Fiesta del Sol' Robust, bushy annual. H 2–3ft (60–90cm), S 1ft (30cm). Has long, entire or occasionally 3-lobed, toothed leaves, 8–30cm (3–12in) long, hairy beneath. Bears vibrant, orange flowers from late summer to fall. **'Torch'** illus. p.324. Z10–11

TOLMIEA

SAXIFRAGACEAE

Genus of one species of perennial that is sometimes semievergreen and is grown as groundcover. Suitable for cool woodland gardens. Fully hardy. Prefers a position in shade and requires well-drained, neutral to acidic soil. Propagate by division in spring or by seed in fall.
T. menziesii (Pick-a-back-plant, Youth-on-age). Mat-forming perennial, sometimes semievergreen. H 18–24in (45–60cm), S 1ft (30cm) or more. Young plantlets develop where ivy-shaped, mid-green leaves join stem. Spikes of tiny, nodding, tubular to bell-shaped, green and chocolate-brown flowers are borne in spring. Z7–9

TOLPIS

ASTERACEAE/COMPOSITAE

Genus of summer-flowering annuals and perennials. Frost hardy. Grow in sun and in fertile, well-drained soil. Propagate by seed sown outdoors in spring.
T. barbata. Moderately fast-growing, upright, branching annual. H 1½–2ft (45–60cm), S 1ft (30cm). Has lance-shaped, serrated, mid-green leaves. Daisylike, bright yellow flower heads, 1in (2.5cm) or more across, with maroon centers, are produced in summer. Z3–10

TOONA

MELIACEAE

Genus of deciduous or semievergreen trees, grown for their foliage, fall color and flowers. Fully hardy. Prefers full sun; requires fertile, well-drained soil. Propagate by seed in fall, or root cuttings in winter.
T. sinensis, syn. *Cedrela sinensis*, illus. p.73.

TORENIA

LINDERNIACEAE

Genus of annuals and perennials. Frost tender. Often grown as summer bedding. Grow in partial shade and in a sheltered position in fertile, well-drained soil. Pinch out growing shoots of young plants to encourage a busy habit. Propagate by seed sown under glass in early spring.
T. fournieri (Wishbone flower). Moderately fast-growing, erect, branching annual. H 1ft (30cm), S 8in (20cm). Has long-stalked, serrated, light green leaves.

In summer and early fall, bears abundant lilac-blue flowers, the lower lips deep purple, the throats marked yellow. Z10–12 (min. 41°F/5°C). **Moon Series Blue Moon ('Dantmoon')** (syn. *T.* Moon Series Blue Moon), H 6–8in (15–20cm), S 1½ft (45cm), is dense and trailing with ovate, toothed, dark green leaves. Bears tubular, flared, 2-tone blue flowers with dark throats.
***T.* Moon Series Blue Moon ('Dantmoon')**. See *T. fournieri* Moon Series Blue Moon ('Dantmoon').

TORREYA

TAXACEAE

See also CONIFERS.
T. californica (California nutmeg) illus. p.101.

Tovara. See *Persicaria*.

TOWNSENDIA

ASTERACEAE/COMPOSITAE

Genus of evergreen, short-lived perennials and annuals, grown for their daisylike flowers. Suit alpine houses, as they dislike winter wet. Fully hardy. Needs sun and moist soil. Propagate by seed in fall.
T. grandiflora illus. p.369.
T. parryi. Evergreen, basal-rosetted, short-lived perennial. H 3–6in (7–15cm), S 2in (5cm). In late spring, produces daisylike, lavender or violet-blue flower heads, with bright yellow centers, above spoon-shaped leaves. Z4–8

TOXICODENDRON

ANACARDIACEAE

Genus of deciduous trees, shrubs, and woody vines, primarily grown for their foliage; many species have rich fall color. Fully to frost hardy. Requires sun and well-drained soil. Propagate by semiripe cuttings in summer, seed in fall or root cuttings in winter.
T. succedaneum, syn. *Rhus succedanea* (Wax tree). Deciduous, spreading tree. H and S 30ft (10m). Large, glossy, dark green leaves, each made up of 9–15 ovate leaflets, turn red in fall. Bears dense clusters of tiny, yellow-green flowers in summer. Female flowers develop into tiny, spherical, black or brownish fruits. ⓘ Contact with the foliage may cause skin irritation. Z4–9
T. vernicifluum, syn. *Rhus verniciflua* (Varnish tree). Deciduous, spreading tree. H 50ft (15m), S 30ft (10m). Large, glossy, bright green leaves, with 7–13 ovate leaflets, redden in fall. Bears dense clusters of tiny, yellow-green flowers in summer, followed by berrylike, brownish-yellow fruits. ⓘ All parts are highly toxic if ingested; contact with the sap may severely irritate the skin. Z8–10

TRACHELIUM

SYN. DIOSPHAERA

CAMPANULACEAE

Genus of small perennials, useful for rock gardens and borders. Some are good in alpine houses. Flowers of half-hardy species are ideal for cutting. Borderline fully hardy to half hardy, but protect fully hardy species under glass in winter as they resent damp conditions. Grow in a sunny, sheltered site in fertile, very well-drained soil (*T. asperuloides* prefers lime-rich soil). Propagate by seed in early or mid-spring or by softwood cuttings in early summer.
T. asperuloides, syn. *Diosphaera asperuloides*, illus. p.369.
T. caeruleum (Throatwort) illus. p.313.

TRACHELOSPERMUM

APOCYNACEAE

Genus of evergreen, woody-stemmed, twining climbers with stems that exude milky sap when cut. Frost hardy. Grow in any well-drained soil and in sun or partial shade. Propagate by seed in spring, by layering in summer, or by semiripe cuttings in late summer or fall.
T. asiaticum illus. p.195.
T. jasminoides (Confederate jasmine, Star jasmine) illus. p.195. **'Variegatum'** is a woody, evergreen, twining climber. H 10–15ft (3–5m). Has ovate, glossy, dark green leaves splashed and margined creamy white, often suffused red and pink in winter. In mid- and late summer, bears cymes of pure white flowers. Z8–11

TRACHYCARPUS

ARECACEAE/PALMAE

Genus of evergreen, summer-flowering palms, grown for their architectural habit, foliage and flowers. Fully to frost hardy. Needs full sun and does best if sheltered from strong, cold winds, especially when young. Needs fertile, well-drained soil. Propagate by seed in fall or spring.
T. fortunei (Chusan palm, Windmill palm) illus. p.80.
T. wagnerianus. Dwarf, evergreen palm. H 10–20ft (3–6m), S 6–10ft (2–3m). Has smaller, more rigid, leathery leaves, on shorter stalks than *T. fortunei*, and the segments edged with white hairs. Wind and drought tolerant. Z6–10

TRACHYMENE

APIACEAE/UMBELLIFERAE

Genus of summer-flowering annuals, biennials and perennials. Half hardy. Grow in a sunny, sheltered position and in fertile, well-drained soil. Support with sticks. Propagate by seed sown under glass in early spring.
T. coerulea, syn. *Didiscus coeruleus* (Blue lace flower). Moderately fast-growing, upright, branching annual. H 1½ft (45cm), S 8in (20cm). Has deeply divided, pale green leaves. Spherical heads, to 2in (5cm) across, of tiny, blue flowers are produced in summer. Excellent for cutting. Z10–11

TRADESCANTIA

Spiderwort

COMMELINACEAE

Genus of perennials, some of which are evergreen, grown for their flowers or ornamental foliage. Fully hardy to frost tender. Grow in fertile, moist to dry soil and in sun or partial shade. Cut back or repropagate trailing species when they become straggly. Propagate hardy species by division or seed, and frost-tender species by tip cuttings in spring, summer or fall. Hardy species are useful in shady gardens. ⓘ Contact with the foliage may cause skin irritation.
T. albiflora. See *T. fluminensis*.
***T.* Andersoniana Group 'J.C. Weguelin'**, syn. *T.* 'J.C. Weguelin'. Clump-forming perennial. H to 2ft (60cm), S 1½ft (45cm). Has narrowly lance-shaped, fleshy, green leaves, 6–12in (15–30cm) long. In summer, produces clusters of 3-petaled, lavender-blue flowers, 1in (2.5cm) or more across, surrounded by 2 leaflike bracts. H6. **'Osprey'** (syn. *T.* 'Osprey') illus. p.263. **'Purple Dome'** (syn. *T.* 'Purple Dome') illus. p.269.
T. blossfeldiana. See *T. cerinthoides*.
T. cerinthoides, syn. *T. blossfeldiana*. Evergreen, creeping perennial. H 2in (5cm), S indefinite. Narrowly ovate, fleshy, stem-clasping leaves, to 4in (10cm) long, are glossy, dark green above, purple with long, white hairs below. Intermittently produces clusters of tiny, pink flowers, with white centers, surrounded by 2 leaflike bracts. Z10–12 (min. 41–45°F/5–7°C). Leaves of **'Variegata'** have long, cream stripes.
T. fluminensis, syn. *T. albiflora* (Wandering Jew). Evergreen perennial with trailing, rooting stems. H 2in (5cm), S to 2ft (60cm) or more. Ovate, fleshy leaves, 1½in (4cm) long, that clasp the stem, are glossy green above, sometimes tinged purple below. Intermittently has clusters of tiny, white flowers enclosed in 2 leaflike bracts. Z10–12 (min. 41–45°F/5–7°C). **'Albovittata'** illus. p.468. **'Aurea'** (syn. *T.f.* 'Variegata') H 1ft (30cm), S indefinite, has striped creamy-white leaves. **'Variegata'** see *T.f.* 'Aurea'.
***T.* 'J.C. Weguelin'.** See *T.* Andersoniana Group 'J.C. Weguelin'.
T. navicularis. See *Callisia navicularis*.
***T.* 'Osprey'.** See *T.* Andersoniana Group 'Osprey'.
***T. pallida* 'Purpurea'**, syn. *T.p.* 'Purple Heart', *Setcreasea purpurea*, illus. p.310.
T. pexata. See *T. sillamontana*.
***T.* 'Purple Dome'.** See *T.* Andersoniana Group 'Purple Dome'.
T. purpusii. See *T. zebrina* 'Purpusii'.
T. sillamontana, syn. *T. pexata*, *T. velutina*, illus. p.469.
T. spathacea, syn. *Rhoeo discolor*, *R. spathacea* (Boat lily, Moses-in-the-cradle). Evergreen, clump-forming perennial. H 20in (50cm), S 10in (25cm). Rosette of lance-shaped, fleshy leaves, to 1ft (30cm) long, is green above, purple below. Bears tiny, white flowers, enclosed in boat-shaped, leaflike bracts, year-round. Z10–12 (min. 41–45°F/5–7°C). **'Vittata'** produces leaves striped longitudinally with pale yellow.
T. velutina. See *T. sillamontana*.
T. zebrina, syn. *Zebrina pendula* (Silver inch plant), illus. p.469. **'Purpusii'** (syn. *T. purpusii*) is a strong-growing, evergreen, trailing or mat-forming perennial. H 4in (10cm), S indefinite. Has elliptic, purple-tinged, bluish-green leaves and tiny, shallowly cup-shaped, pink flowers. **'Quadricolor'** has leaves striped green, pink, red and white. Z10–12 (min. 41–45°F/5–7°C).

TRAPA

Water chestnut

LYTHRACEAE/TRAPACEAE

Genus of annual floating water plants, grown for their foliage and flowers. Half hardy to frost tender. Requires sun. Propagate in spring from seed gathered in fall and stored frost-free, in water, or damp moss.
T. natans (Water chestnut) illus. p.443.

Trichocereus bridgesii. See *Echinopsis lageniformis*.
Trichocereus candicans. See *Echinopsis candicans*.
Trichocereus spachianus. See *Echinopsis spachiana*.

TRICHODIADEMA

AIZOACEAE

Genus of bushy, perennial succulents with woody or tuberous roots and cylindrical to semi-cylindrical leaves. Frost tender. Needs a sunny position and well-drained soil. Propagate by seed or stem cuttings in spring or summer.
T. densum. Tufted, perennial succulent. H 4in (10cm), S 8in (20cm). Cylindrical, pale green leaves are each ½–¾in (1–2cm) long and tipped with clusters of white bristles. Roots and prostrate, green stem are both fleshy and form caudex. The stem tip bears daisylike, cerise-pink flower heads, 1¼in (3cm) across, in summer. Z10–12 (min. 41°F/5°C)
T. mirabile illus. p.481.

TRICHOSANTHES

CUCURBITACEAE

Genus of annual and evergreen, perennial, tendril climbers, grown for their fruits and overall appearance. Frost tender. Needs full sun or partial shade and humus-rich soil. Water freely when in growth, less in cool weather. Provide support. Propagate by seed in spring at 70°F (21°C) or above.
T. anguina. See *T. cucumerina* var. *anguina*.
T. cucumerina* var. *anguina, syn. *T. anguina* (Snake gourd). Erect to spreading, annual, tendril climber. H 10–15ft (3–5m). Broadly ovate to almost triangular, sometimes shallowly 3- to 5-lobed, mid- to pale green leaves are to 8in (20cm) long. In summer, bears 5-petaled, white flowers, 1–2in (2.5–5cm) across, with heavily fringed petals; females are solitary, the males in racemes. Cylindrical fruits, 2ft (60cm) or rarely to 6ft (2m) long, often twisted or coiled, are green-and-white striped and ripen to dull orange. Z12 (min. 59°F/15°C)

Trichosma suavis. See *Eria coronaria*.
Tricuspidaria lanceolata. See *Crinodendron hookerianum*.

TRICYRTIS

Toad lily

LILIACEAE/CONVALLARIACEAE

Genus of late summer- and fall-flowering, rhizomatous perennials. Fully hardy.

Grows in sun or, in warm areas, in partial shade. Needs humus-rich, moist soil. Propagate by division in spring or by seed in fall.
T. formosana illus. p.247. **'Dark Beauty'** is a rhizomatous perennial. H to 32in (80cm), S 1½ft (45cm). Has erect, somewhat zig-zagging, softly hairy stems, and inversely lance-shaped to ovate, veined, glossy, dark green leaves. In early fall, produces branched, terminal cymes of upward-facing, star-shaped, deep purple flowers. Cultivars of **Stolonifera Group** have purple-pink flowers with darker spots; can be invasive. Z5–8
T. hirta. Upright, rhizomatous perennial. H 1–3ft (30cm–1m, S 1½ft (45cm). In late summer and early fall, clusters of large, open bell-shaped, white-spotted, purple flowers are borne from axils of uppermost leaves. Leaves are narrowly ovate, hairy and dark green and clasp stems. Z4–8.
var. *alba* illus. p.277. **'Miyazaki'**, H to 3ft (90cm), S 1½ft (45cm), bears white flowers, spotted lilac-purple, in the leaf axils all along the stems.
T. macrantha. Upright, rhizomatous perennial. H and S 2ft (60cm). In early fall, produces loose sheaves of open bell-shaped, deep primrose-yellow flowers, spotted light chocolate, at tips of arching stems; small, ovate leaves are dark green. Z4–8

TRIFOLIUM
Clover
PAPILIONACEAE/LEGUMINOSAE

Genus of annuals, biennials, and perennials, some of which are semievergreen, with round, usually 3-lobed leaves and heads of pealike flowers. Some species are useful in rock gardens or on banks, others in agriculture. Many are invasive. Fully to frost hardy. Needs sun and well-drained soil. Propagate by division in spring or by seed in fall. Self-seeds readily.
***T. repens* 'Purpurascens'** illus. p.375.

TRILLIUM
Trinity flower, Wood lily
LILIACEAE/MELANTHIACEAE

Genus of rhizomatous perennials with petals, sepals, and leaves that are all borne in whorls of 3. Excellent for woodland gardens, and also for shaded borders and rockeries. Fully to frost hardy. Enjoys partial shade and fertile, moist but well-drained, neutral to acidic soil. Propagate by division after foliage has died down in summer or by seed in fall.
T. cernuum. Clump-forming perennial. H 1–1½ft (30–45cm), S 1ft (30cm). Has nodding, maroon-centered, white flowers borne in spring beneath luxuriant, 3-parted, mid-green leaves. Z4–9
T. chloropetalum illus. p.255.
var. *giganteum* is a vigorous, clump-forming perennial. H to 16in (40cm), S 8in (20cm). Has stalkless, broadly ovate to diamond-shaped, dark green leaves, variably marbled grayish-cream or maroon. Bears upright, stalkless, fragrant white, red or reddish-purple flowers in spring. Z6–9
T. erectum (Birthroot, Squawroot) illus. p.260.
T. grandiflorum (Wake-robin) illus. p.255.
'Flore Pleno' see *T.g.* f. *polymerum* 'Flore Pleno'. **f. *polymerum* 'Flore Pleno'** (syn. *T.g.* 'Flore Pleno') is a clump-forming perennial. H 15in (38cm), S 1ft (30cm). Large, double, pure white flowers, are borne singly in spring, turning pink with age. Has large broadly ovate, dark green leaves. Z4–8
T. luteum. Upright, clump-forming perennial. H to 16in (40cm), S to 1ft (30cm). Has stalkless, elliptic to broadly ovate, abruptly pointed, mid-green leaves, heavily marked paler green. Stalkless, upright, sweet-scented flowers, with golden- or bronze-green petals and lance-shaped, mid-green sepals, are borne above the leaves in spring. Z4–8
T. nivale (Dwarf white wood lily, Snow trillium). Rhizomatous perennial. H 3in (7cm), S 4in (10cm). In early spring, whorls of 3 ovate leaves emerge at same time as outward-facing, slightly nodding, white flowers, each with 3 narrowly ovate petals and green sepals. Difficult to grow but thrives in a trough or alpine house. Z4–6
T. ovatum illus. p.255.
T. rivale illus. p.350.
T. sessile (Toadshade, Wake-robin) illus. p.260.
T. undulatum (Painted trillium, Painted wood lily). Clump-forming perennial. H 4–8in (10–20cm), S 6–8in (15–20cm). Open funnel-shaped flowers with red-bordered, green sepals and 3 white or pink petals, each with a basal carmine stripe, are borne singly in spring, above broadly ovate, basal, blue-green leaves. Z4–8

TRIPETALEIA
ERICACEAE

Genus of deciduous shrubs, grown for its flowers; often included in *Elliottia*. Fully hardy. Needs partial shade and moist, peaty, neutral to acidic soil. Propagate by softwood cuttings in summer or by seed in fall.
T. paniculata, syn. *Elliottia paniculata*. Deciduous, upright shrub. H and S 5ft (1.5m). Bears upright panicles of pink-tinged, white flowers, each with 3–5 narrow petals, from midsummer to early fall. Lance-shaped, dark green leaves persist well into fall. Z7–9

Tristania conferta. See *Lophostemon confertus*.

TRITELEIA
ASPARAGACEAE

Genus of late spring- and early summer-flowering corms with wiry stems bearing *Allium*-like umbels of funnel-shaped flowers. Long, narrow leaves usually die away by flowering time. Frost hardy. Needs an open but sheltered, sunny situation and well-drained soil that dries out to some extent in summer. Dies down in mid- to late summer until spring; plant during dormancy in early fall. Propagate by seed or offsets in fall.
T. hyacinthina, syn. *Brodiaea hyacinthina*, *B. lactea*, illus. p.408.
T. ixioides, syn. *Brodiaea ixioides*, *B. lutea*. Early summer-flowering corm. H to 20in (50cm), S 3–4in (8–10cm). Bears semierect, basal leaves. Stem bears a loose umbel, to 5in (12cm) across, of yellow flowers; petals each have a purple stripe. Z9–11. **'Starlight'** illus. p.407.
T. laxa, syn. *Brodiaea laxa*, illus. p.411.
'Koningin Fabiola', syn. *Brodiaea laxa* 'Queen Fabiola', illus. p.411.
T. peduncularis, syn. *Brodiaea peduncularis*. Early summer-flowering corm. H 4–16in (10–40cm), S 4–6in (10–15cm). Has semierect, basal leaves. Stem bears a loose umbel, to 14in (35cm) across, of white flowers, each ⅝–1¼in (1.5–3cm) long, faintly tinged blue. Z9–11

TRITONIA
IRIDACEAE

Genus of corms, with sword-shaped, erect leaves, grown for their spikes of colorful flowers. Frost to half hardy. Needs a sunny, sheltered site and well-drained soil. Plant corms in fall (*T. disticha* subsp. *rubrolucens* in spring). Dry off once leaves die back in summer (winter for *T. disticha* subsp. *rubrolucens*). Propagate by seed in fall or by offsets at replanting time.
T. crocata, syn. *T. hyalina*. Spring-flowering corm. H 8–20in (20–50cm), S 3in (8cm). Has erect, basal leaves. Each wiry stem bears a loose spike of up to 10 widely cup-shaped, orange to pinkish-red flowers, 1½–2in (4–5cm) across, with transparent margins. Z10–11
T. disticha* subsp. *rubrolucens, syn. *T. rosea*, *T. rubrolucens*, illus. p.409.
T. hyalina. See *T. crocata*.
T. rosea. See *T. disticha* subsp. *rubrolucens*.
T. rubrolucens. See *T. disticha* subsp. *rubrolucens*.

TROCHODENDRON
TROCHODENDRACEAE

Genus of one species of evergreen tree or large shrub, grown for its foliage and racemes of unusual, vivid green flowers. Frost hardy, but shelter from cold, strong winds. Tolerates a sunny or shady site and requires moist but well-drained soil; dislikes very dry or very shallow, chalky soil. Propagate by semiripe cuttings in summer or by seed in fall.
T. aralioides illus. p.79.

TROLLIUS
Globeflower
RANUNCULACEAE

Genus of spring- or summer-flowering perennials that thrive beside pools and streams. Fully hardy. Tolerates sun or shade. Does best in moist soil. Propagate by division in early fall or by seed in summer or fall.
***T.* x *cultorum* 'Alabaster'** illus. p.436.
'Canary Bird' (syn. *T. europeaus* 'Canary Bird') is a clump-forming perennial. H 2ft (60cm), S 1½ft (45cm). Bears globular, canary-yellow flowers singly in spring, above rounded, deeply divided, mid-green leaves. **'Earliest of All'** has globular, butter-yellow flowers. **'Goldquelle'** has large orange flowers. **'Orange Princess'**, H 30in (75cm), S 1½ft (45cm), produces orange-gold flowers. Z4–7
T. europaeus (Globeflower) illus. p.445.
'Canary Bird' see *T.* x *cultorum* 'Canary Bird'.
T. pumilus illus. p.358.
T. yunnanensis. Clump-forming perennial. H 2ft (60cm), S 1ft (30cm). Has broadly ovate leaves with 3–5 deep lobes. Buttercuplike, bright yellow flowers are produced in late spring or summer. Z5–8

TROPAEOLUM
Nasturtium
TROPAEOLACEAE

Genus of climbing, trailing, or bushy annuals and herbaceous perennials, grown for their brightly colored flowers. Fully hardy to frost tender. Most species prefer sun and well-drained soil. Propagate by seed, tubers or basal stem cuttings in spring. Aphids and caterpillars of the cabbage white butterfly and its relatives may cause problems. Grow climbing tropaeolums over a fence, trellis, pergola, or shrub, or let them trail over a bank or dry wall.
***T.* Alaska Series.** See *T. majus* Alaska Series.
T. azureum. Herbaceous, leaf-stalk climber with small tubers. H to 4ft (1.2m). Leaves, to 2in (5cm) across, have 5 narrow lobes. Small, purple-blue flowers, with notched petals, open in late summer. Z9–11
T. canariense. See *T. peregrinum*.
***T.* 'Empress of India'** illus. p.307.
***T.* Gleam Series.** See *T. majus* Gleam Series.
***T.* Jewel Series.** See *T. majus* Jewel Series.
T. majus. Fast-growing, bushy, climbing annual. H 3–10ft (1–3m), S 5–15ft (1.5–5m). Has rounded to kidney-shaped, wavy-margined, pale green leaves. From summer to fall, bears trumpet-shaped, long-spurred, red, orange or yellow flowers, 2–2½in (5–6cm) across. Z9–11.
Alaska Series illus. p. 323.
Gleam Series, H 16in (40cm), S 2ft (60cm), is semitrailing, and bears semi-double flowers in single colors or in a mixture that includes scarlet, yellow, and orange and various pastel shades.
'Hermine Grashoff' illus. p.307.
Jewel Series illus. p.327. **'Peach Melba'** is bushy, H to 1½ft (45cm), S 1ft (30cm), and bears pale yellow flowers, blotched with scarlet. **Whirlybird Series** (syn. *T.* Whirlybird Series), H 10in (25cm), S 14in (35cm), bears single to semidouble flowers in single or a mixture of colors.
***T.* 'Peach Melba'.** See *T. majus* 'Peach Melba'.
T. peregrinum, syn. *T. canariense* (Canary creeper). Herbaceous, leaf-stalk climber. H to 6ft (2m). Grey-green leaves have 5 broad lobes. Small, bright yellow flowers, the 2 upper petals much larger and fringed, are borne from summer until first frosts. In cool areas, best grown as an annual. Z10–12 (min. 37°F/3°C)
T. polyphyllum illus. p.276.
T. speciosum (Flame creeper, Flame nasturtium) illus. p.202.
T. tricolor, syn. *T. tricolorum*, illus. p.461.
T. tricolorum. See *T. tricolor*.
T. tuberosum. Herbaceous, tuberous-rooted, leaf-stalk climber. H 6–10ft (2–3m). Grayish-green leaves have 3–5 lobes. From midsummer to late fall, bears cup-shaped flowers with orange-yellow petals, orange-red sepals, and a long spur. Z9–11.
var. *lineamaculatum* 'en Aslet' illus. p.207.

***T.* Whirlybird Series.** See *T. majus* Whirlybird Series.

TSUGA

PINACEAE

See also CONIFERS.
T. canadensis (Canada Hemlock, Eastern hemlock) illus. p.102. **'Aurea'** is a broadly conical-shaped conifer, often with several stems. H 15ft (5m) or more, S 6–10ft (2–3m). Shoots are pale gray with spirally arranged, needlelike, flattened leaves, golden-yellow when young, aging to green in their second year, those along the top are inverted to show silver bands. Has ovoid, light brown cones. **'Bennett'**, H 3–6ft (1–2m), S 6ft (2m), is a compact, dwarf form with arching branches and a nest-shaped, central depression.
'Pendula' (syn. *T.c.* f. *pendula*) has weeping branches that may be trained to create a dome. H and S 10–15ft (3–5m); if left to spread at ground level, H 20in (50cm), S 6–15ft (2–5m). Z6–8
T. caroliniana (Carolina hemlock). Conifer with a conical or ovoid crown. H 30–50ft (10–15m), S 15–25ft (5–8m). Red-brown shoots produce spirally set, needlelike, flattened, glossy, dark green leaves. Bears ovoid, green cones, ripening to brown. Z3–8
T. diversifolia (Japanese hemlock, Northern Japanese hemlock). Conifer with a broad, dense crown. H 30–50ft (10–15m), S 25–40ft (8–12m). Has orange shoots and needlelike, flattened, glossy, deep green leaves, banded with white beneath, that are spirally set. Ovoid cones are dark brown. Z6–8
T. heterophylla (Western hemlock). Vigorous, conical conifer with pendent branchlets. H 70–100ft (20–30m), S 25–30ft (8–10m). Gray shoots bear spirally set, needlelike, flattened, dark green leaves with silvery bands beneath. Green cones ripen dark brown. Z6–8
T. mertensiana (Mountain hemlock). Narrowly conical conifer with short, horizontal branches. H 25–50ft (8–15m), S 10–20ft (3–6m). Red-brown shoots bear needlelike, flattened, glaucous blue-green or gray-green leaves, spirally arranged. Cones are cylindrical and yellow-green to purple, ripening to dark brown. Z6–8. **'Glauca'** illus. p.99.
T. sieboldii (Japanese hemlock, Southern Japanese hemlock). Broadly conical conifer. H 50ft (15m), S 25–30ft (8–10m). Glossy, buff shoots bear flattened, needlelike, lustrous, dark green leaves, set spirally. Cones are ovoid and brown. Z6–8

Tsusiophyllum tanakae. See *Rhododendron tsusiophyllum.*

TUBERARIA

CISTACEAE

Genus of annuals and perennials, grown for their flowers. Fully to frost hardy. Requires sun and very well-drained soil. Propagate by seed in spring.
T. guttata, syn. *Helianthemum guttatum*. Moderately fast-growing, upright, branching annual. H and S 4–12in (10–30cm). Has lance-shaped, hairy, mid-green leaves. In summer, bears yellow flowers, sometimes red-spotted at base of petals, that look like small, single roses. H5

TULBAGHIA

ALLIACEAE/LILIACEAE

Genus of clump-forming, mainly deciduous, sometimes semievergreen, rhizomatous or bulbous perennials. Grown for their umbels of dainty flowers, some fragrant, especially at night, which are borne over a long period from late spring to fall. Frost to frost tender. Needs full sun and well-drained soil. Propagate by division or seed in spring.
T. fragrans. See *T. simmleri*.
T. natalensis. Semievergreen, clump-forming perennial. H to 10in (25cm), S 4in (10cm). In midsummer, umbels of delicately fragrant, tubular, yellow-centered, white flowers, with spreading petal lobes, open above grasslike, mid-green foliage. Z10–11
T. pulchella. See *T. simmleri*.
T. simmleri, syn. *T. fragrans*, *T. pulchella*, *T. simmieri*, illus. p.411.
T. violacea illus. p.280.

TULIPA

Tulip

LILIACEAE

Genus of mainly spring-flowering bulbs, grown for their bright, upward-facing flowers. Each bulb produces a few linear to lance-shaped, green or gray-green leaves on the stem. Flowers bear 6 usually pointed petals (botanically known as perianth segments) and 6 stamens, singly, unless otherwise stated below. Each plant has a spread of up to 8in (20cm). All are fully hardy unless otherwise stated. Requires a sunny position with well-drained soil and appreciates a summer baking; in cool, wet areas, bulbs may be lifted, when the leaves have died down, and stored in a dry place for replanting in fall. Propagate by division of bulbs in fall or, for species, by seed in spring or fall. ⓘ If ingested, all parts may cause mild stomach upset, and contact with any part may aggravate skin allergies. See also feature panel pp.400–401.
Horticulturally, tulips are grouped into the following divisions.

Single Early Group (Div. 1)—bear cup-shaped, single, white to dark purple flowers, to 3in (7cm) across, often margined, "flamed" or flecked with a contrasting color, from early to mid-spring. H 6–18in (15–45cm).

Double Early Group (Div. 2)—has bowl-shaped, fully double, dark red to yellow or white flowers, to 3in (8cm) across, often margined or flecked with another color, borne in mid-spring. H 12–16in (30–40cm).

Triumph Group (Div. 3)—sturdy stems bear cup-shaped, single flowers, to 2½in (6cm) across, in a range of colors and often margined or flecked with a contrasting color, in mid- and late spring. H 35–60cm (14–24in).

Darwin Hybrid Group (Div. 4)—has egg-shaped, single flowers, to 3in (7cm) across, in a range of colors and usually flushed, "flamed" or margined with a different color and often with contrasting bases, from mid- to late spring. H 20–28in (50–70cm).

Single Late Group including Cottage and Darwin Hybrids (Div. 5)—has cup- or goblet-shaped, single flowers, sometimes several to a stem, in white to yellow, pink, red or almost black, often with contrasting margins, in late spring. H 18–30in (45–75cm).

Lily-flowered Group (Div. 6)—strong stems bear goblet-shaped, single flowers, to 3in (8cm) across, with reflexed, pointed petal tips, and sometimes margined, "flamed" or flushed with a contrasting color, in late spring. H 18–26in (45–65cm).

Fringed Group (Div. 7)—flowers are similar to those in Div. 6, but have fringed petals. H 14–26in (35–65cm).

Viridiflora Group (Div. 8)—has cup- or almost closed bowl-shaped, single flowers, to 3in (8cm) across, sometimes entirely green, margined with another color, or white to yellow, red or purple, "flamed" or striped green, with contrasting centers, borne in late spring. H 16–22in (40–55cm).

Rembrandt Group (Div. 9)—comprises mostly very old cultivars, similar to Div. 6, but has colors "broken" into striped or feathered patterns owing to virus. Flowers in late spring. H 18–26in (45–65cm).

Parrot Group (Div. 10)—bears cup-shaped, single, white to pink or violet-blue flowers, to 4in (10cm) across, often unevenly striped with different colors, including green, borne in late spring. Petals are finely and irregularly cut. H 14–26in (35–65cm).

Double Late Group (peony-flowered) (Div. 11)—has bowl-shaped, fully double flowers, to 5in (12cm) across, in white to purple, sometimes margined or "flamed" in a different color, borne in late spring. H 14–24in (35–60cm).

Kaufmanniana Group (Div. 12)—comprises *T. kaufmanniana* and hybrids and has bowl-shaped, single flowers, 3–4in (8–10cm) across, frequently multicolored and usually with distinctively colored bases, in early or mid-spring. Leaves are sometimes marked bronze, red, or purple. H 6–12in (15–30cm).

Fosteriana Group (Div. 13)—comprises *T. fosteriana* and hybrids and has bowl-shaped, single flowers, to 5in (12cm) across, in white to yellow or dark red, often margined or "flamed" in another color and with contrasting bases, borne in mid-spring. Leaves are sometimes marked red-purple. H 8–26in (20–65cm).

Greigii Group (Div. 14)—comprises *T. greigii* and hybrids and has bowl-shaped, single, yellow to red flowers, to 4in (10cm) across, sometimes "flamed" or margined in a different color and with contrasting bases, borne in early or mid-spring. Blue-green leaves are generally wavy-margined and always marked dark bluish-maroon. H 6–12in (15–30cm).

Miscellaneous Group (Div. 15)—comprises all species and hybrids not included in other divisions. Flowers are produced from late winter to late spring.

***T.* 'Abu Hassan'** (illus. p.401), Div. 3. Mid- to late-flowering spring bulb. H 20in (50cm). Produces cardinal-red flowers with pinkish-red stripes and yellow edges. Z3–8
T. acuminata (Horned tulip; illus. p.401), Div. 15. Mid-spring-flowering bulb. H 1–1½ft (30–45cm). Flowers are 3–5in (7–13cm) long, with long-pointed, tapered, pale red or yellow petals, often tinged with red or green outside. Z3–8
***T.* 'Ad Rem'**, Div. 4. Mid- to late spring-flowering bulb. H 2ft (60cm). Flowers are scarlet with black bases and yellow margins. Anthers are yellow. Z3–8
T. aitchisonii. See *T. clusiana*.
***T.* 'Albert Heijn'**, Div. 13. (illus. p.400). Early spring-flowering bulb. H 14in (35cm). Bears deep rose-pink flowers with a purple sheen and paler pink edges. Z3–8
***T.* 'Ancilla'**, Div. 12. Early spring-flowering bulb. H 6in (15cm). Flowers are pink and reddish outside, white inside, each with a central, red ring. Z3–8
***T.* 'Angélique'**, Div. 11. Late spring-flowering bulb. H 16in (40cm). Delicately scented, double, pale pink flowers deepen with age. Each petal has paler streaks and a lighter margin. Good for bedding. Z3–8
***T.* 'Apeldoorn's Elite'** (illus. p.401), Div. 4. Mid- to late spring-flowering bulb. H 2ft (60cm). Has buttercup-yellow flowers feathered with cherry-red and with yellowish-green bases. Z3–8
***T.* 'Apricot Beauty'**, Div. 1. Early spring-flowering bulb. H 16in (40cm). Flowers are salmon-pink, faintly tinged red. Z3–8
***T.* 'Artist'** (illus. p.401), Div. 8. Late spring-flowering bulb. H 1½ft (45cm). Flowers are salmon-pink and purple outside, sometimes marked green, and deep salmon-pink and green inside. Z3–8
***T.* 'Attila'**, Div. 3. Mid-spring-flowering bulb. H 16in (40cm). Strong stems bear long-lasting, pink flowers. Z3–8
T. aucheriana, Div. 15. Early spring-flowering bulb. H to 8in (20cm). Has gray-green leaves. Bears yellow-centered, pink flowers, 2–5cm (¾–2in) long, each tapered at the base, and with ovate petals. Z3–8
T. australis. See *T. sylvestris*.
T. bakeri. See *T. saxatilis* Bakeri Group.
***T.* 'Balalaika'**, Div. 5. Late spring-flowering bulb. H 20in (50cm). Bright red flowers each have a yellow base and black stamens. Z3–8
***T.* 'Ballade'** (illus. p.400), Div. 6. Late spring-flowering bulb. H 20in (50cm). Reddish-magenta flowers with a white-margined, yellow base have long petals that are margined white. Z3–8
***T.* 'Ballerina'** (illus. p.401), Div.6. Late-flowering spring bulb. H 2ft (60cm). Produces lemon-yellow flowers with blood-red, flamelike markings, orange-yellow veins near the margins, and star-shaped yellow bases. Inner surfaces are bright red, feathered marigold-orange, with pale golden-yellow anthers. Z3–8
T. batalinii. See *T. linifolia* Batalinii Group.

***T.* 'Bellona'** (illus. p.401), Div. 1. Early spring-flowering bulb. H 1ft (30cm). Fragrant flowers are deep golden-yellow. Good for bedding and forcing. Z3–8

T. biflora, syn. *T. polychroma*, Div. 15. Early spring-flowering bulb. H 2–4in (5–10cm). Has gray-green leaves. Stem bears 1–5 fragrant, yellow-centered, white flowers, ⅝–1½in (1.5–3.5cm) long and tapered at the bases. Narrowly ovate petals are flushed outside with greenish-gray or greenish-pink. Good for a rock garden. Z4–7

***T.* 'Bing Crosby'**, Div. 3. Mid- to late spring-flowering bulb. H 20in (50cm). Bears scarlet flowers. Z3–8

***T.* 'Bird of Paradise'** (illus. p.400), Div. 10. Late spring-flowering bulb. H 1½ft (45cm). Produces orange-margined, cardinal-red flowers with bright yellow bases. Anthers are purple. Z3–8

***T.* 'Black Hero'** (illus. p.401), Div. 11. Late spring-flowering bulb. H 2ft (60cm). Flowers have maroon outer petals and darker, almost black edges and dark purple-black inner petals. Z3–8

***T.* 'Black Jewel'**, Div. 7. Late spring-flowering bulb. H 20in (50cm). Produces deep maroon-purple, almost black flowers with a crystalline fringe very lightly marked with golden-yellow. Z3–8

***T.* 'Blue Parrot'** (illus. p.401), Div. 10. Late spring-flowering bulb. H 2ft (60cm). Bears very large, bright violet flowers, sometimes bronze outside, on strong stems. Z3–8

***T.* 'Burgundy Lace'**, Div. 7. Late spring-flowering bulb. H 2ft (60cm). Flowers are wine-red with fringed margins. Z3–8

***T.* 'Candela'** (illus. p.401), Div. 13. Early to mid-spring-flowering bulb. H 1ft (30cm). Long-lasting, large flowers are yellow, with black anthers. Z3–8

***T.* 'Cape Cod'**, Div. 14. Mid- to late spring-flowering bulb. H 1½ft (45cm). Grey-green leaves have reddish stripes. Yellowish-bronze flowers have a black-and-red base; petals are margined yellow outside. Z3–8

***T.* 'Carnaval de Nice'** (illus. p.400), Div. 11. Late spring-flowering bulb. H 16in (40cm). Double flowers are white feathered with deep red. Z3–8

***T.* 'China Pink'** (illus. p.400), Div. 6. Late spring-flowering bulb. H 22in (55cm). Flowers are pink, each with a white base, and have slightly reflexed petals. Z3–8

***T.* 'Chopin'**, Div. 12. Early spring-flowering bulb. H 8in (20cm). Has brown-mottled, gray-green leaves. Lemon-yellow flowers have black bases. Z3–8

***T.* 'Clara Butt'**, Div. 5. Late spring-flowering bulb. H 2ft (60cm). Flowers are salmon-pink. Good for bedding. Z3–8

T. clusiana, syn. *T. aitchisonii* (Lady tulip), Div. 15. Mid-spring-flowering bulb. H to 1ft (30cm). Has gray-green leaves. Each stem bears 1 or 2 flowers, ¾–2½in (2–6.5cm) long, that are bowl-shaped at the base. Narrowly ovate, white petals are purple or crimson at base inside, striped deep pink outside. Stamens are purple. Z3–8. Flowers of **var. *chrysantha*** (illus. p.401) are yellow, flushed red or brown outside, with yellow stamens. **var. *stellata*** has white flowers with yellow bases and yellow stamens.

***T.* 'Couleur Cardinal'**, Div. 3. Mid-spring-flowering bulb. H 14in (35cm). Plum-purple flowers are dark crimson-scarlet inside. Z3–8

T. dasystemon of gardens. See *T. tarda*.

***T.* 'Dawnglow'**, Div. 4. Mid- to late-spring-flowering bulb. H 2ft (60cm). Pale apricot flowers are flushed with deep pink outside and are deep yellow inside. Z3–8

***T.* 'Diana'**, Div. 1. Early spring-flowering bulb. H 11in (28cm). Large, pure white flowers are borne on strong stems. Z3–8

***T.* 'Dillenburg'**, Div. 5. Late spring-flowering bulb. H 26in (65cm). Brick-orange flowers are good for bedding. Z3–8

***T.* 'Don Quichotte'**, Div. 3. Mid-spring-flowering bulb. H 16in (40cm). Purple-pink flowers are long-lasting. Z4–7

***T.* 'Dreamboat'**, Div. 14. Mid- to late spring-flowering bulb. H 10in (25cm). Produces gray-green leaves with brown stripes. Urn-shaped, red-tinged, amber-yellow flowers have greenish-bronze bases with red blotches. H6

***T.* 'Dreaming Maid'** (illus. p.401), Div. 3. Mid- to late spring-flowering bulb. H 22in (55cm). Flowers have white-margined, violet petals. Z3–8

***T.* 'Dreamland'** (illus. p.400), Div. 5. Late spring-flowering bulb. H 2ft (60cm). Flowers are red with white bases and yellow anthers. Z3–8

T. eichleri. See *T. undulatifolia*.

***T.* 'Esperanto'** (illus. p.400), Div. 8. Late spring-flowering bulb. H 1ft (30cm). Produces flowers with rose-pink petals that fade to pale pink toward the bottom, with green feathered bases. Has cream-edged, gray-green leaves. Z3–8

***T.* 'Estella Rijnveld'** (illus. p.400), Div. 10. Late spring-flowering bulb. H 2ft (60cm). Large flowers are red, streaked with white and green. Z3–8

***T.* 'Fancy Frills'**, Div. 10. Late spring-flowering bulb. H 20in (50cm). Fringed, ivory-white petals are striped and margined pink outside; inside, base is rose-pink. Anthers are pale yellow. Z3–8

***T.* 'Flaming Parrot'**, Div. 10. Late-spring flowering bulb. H 22in (55cm). Deep yellow flowers, "flamed" dark red, have primrose-yellow bases. Insides are primrose-yellow with glowing, blood-red "flames." Anthers are purple-black. Z3–8

T. fosteriana, Div. 15. Early spring-flowering bulb. H 8–18in (20–45cm). Has a downy stem and gray-green leaves, downy above. Flowers, 1¼–4in (4.5–10cm) long, are bowl-shaped at the base with narrowly ovate, bright red petals, each with a purplish-black, yellow-ringed center. Z3–8

***T.* 'Fringed Beauty'**, Div. 7. Early to mid-spring-flowering bulb. H 13in (32cm). Fringed petals are bright red with yellow margins. Excellent for forcing. Z3–8

***T.* 'Fringed Elegance'**, Div. 7. Late spring-flowering bulb. H 20in (50cm). Produces pale yellow flowers dotted with pink outside; inside, bases have bronze-green blotches. Each petal has a yellow fringe. Anthers are purple. Z3–8

***T.* 'Gala Beauty'**, Div. 9. Late spring-flowering bulb. H 2ft (60cm). Yellow flowers are streaked with crimson. Z3–8

***T.* 'Garden Party'**, Div. 3. Mid- to late spring-flowering bulb. H 16–18in (40–45cm). Produces white flowers; petals are margined deep pink outside, and inside are streaked with deep pink. Z3–8

***T.* 'Gavota'**, Div. 3. Mid- to late spring-flowering bulb. H 16in (40cm). Produces brownish-red flowers, each petal broadly margined with creamy-yellow. Z3–8

***T.* 'Giuseppe Verdi'** illus. p.407.

***T.* 'Glück'** (illus. p.401), Div. 12. Early spring-flowering bulb. H 6in (15cm). Has reddish-brown-mottled, gray-green leaves. Petals are red outside, margined bright yellow, and yellow inside, each with a darker base. Z3–8

***T.* 'Golden Apeldoorn'** (illus. p.401), Div. 4. Mid- to late spring-flowering bulb. H 20–24in (50–60cm). Golden-yellow flowers have a black base and stamens. Z3–8

***T.* 'Golden Artist'**, Div. 8. Late spring-flowering bulb. H 1½ft (45cm). Flowers are bright golden-yellow. Z3–8

***T.* 'Gordon Cooper'**, Div. 4. Mid- to late spring-flowering bulb. H 2ft (60cm). Petals are deep pink outside, margined red; inside they are red with blue-and-yellow bases. Has black anthers. Z3–8

***T.* 'Greenland'.** See *T.* 'Groenland'.

T. greigii, Div. 15. Early spring-flowering bulb. H 8–18in (20–45cm). Has downy stems. Leaves are streaked or mottled with red or purple. Cup-shaped flowers, 1¼–4in (3–10cm) long, with broadly ovate, red or yellow petals, have yellow-ringed, black centers. Z3–8

***T.* 'Greuze'**, Div. 5. Late spring-flowering bulb. H 26in (65cm). Flowers are dark violet-purple. Good for bedding. Z3–8

***T.* 'Groenland'**, syn. *T.* 'Greenland' (illus. p.400), Div. 8. Late spring-flowering bulb. H 20in (50cm). Bears flowers with green petals that are margined rose-pink. Good for bedding. Z3–8

T. hageri, Div. 15. Mid-spring-flowering bulb. H 4–12in (10–30cm). Stem has 1–4 flowers, 1½–2½in (3–6cm) long, tapered at the base and with ovate, dull red petals tinged with green outside. Z3–8

***T.* 'Heart's Delight'**, Div. 12. Early spring-flowering bulb. H 8–10in (20–25cm). Has green leaves striped red-brown. Deep pinkish-red flowers, margined pale pink, have pale pink inside with red-blotched, yellow bases. Z3–8

***T.* 'Hollywood'**, Div. 8. Late spring-flowering bulb. H 1ft (30cm). Red flowers, tinged and streaked with green, have yellow bases. Good for bedding. Z3–8

T. humilis, Div. 15. Early spring-flowering bulb. Variable species, often considered to include *T. aucheriana*, *T. pulchella* and *T. violacea*. H to 8in (20cm). Has gray-green leaves. Stem bears usually 1, sometimes 2 or 3, pinkish-magenta flowers, ¾–2in (2–5cm) long, tapered at the base and, with a yellow center inside. Petals are ovate. Suitable for a rock garden. Z3–8.

var. *pulchella* (syn. *T. pulchella)* bears flowers, ¾–2in (2–5cm) long and tapered at the base, with ovate, purple petals and yellow or bluish-black centers inside.

Violet-pink flowers of **Violacea Group** (syn. *T. violacea*) are tapered at the base and each have a yellow or bluish-black center inside.

***T.* 'Jack Laan'**, Div. 9. Late spring-flowering bulb. H 2ft (60cm). Produces purple flowers that are shaded with brown and feathered with white and yellow. Z3–8

***T.* 'Juan'**, Div. 13. Early to mid-spring-flowering bulb. H 14in (35cm). Flowers are deep orange overlaid with scarlet. Leaves are marked with reddish-brown. Z3–8

T. kaufmanniana (Water lily tulip; illus. p.401), Div. 15. Early spring-flowering bulb. H 4–14in (10–35cm). Leaves are gray-green. Stem produces 1–5. often scented flowers, 1½–4in (3–10cm) long and bowl-shaped at the base. Narrowly ovate petals are usually either cream or yellow, flushed with pink or gray-green outside; centers are often a different color. Pink, orange or red forms occasionally occur. Z3–8

***T.* 'Keizerskroon'**, Div. 1. Early spring-flowering bulb. H 14in (35cm). Flowers have crimson-scarlet petals, with broad, bright yellow margins. A good, reliable bedding tulip. Z3–8

***T.* 'Kingsblood'**, Div. 5. Late spring-flowering bulb. H 2ft (60cm). Flowers are cherry-red with scarlet markings. Z3–8

T. linifolia, Div. 15. Early spring-flowering bulb. H 4–12in (10–30cm). A variable species, often considered to include *T. batalinii* and *T. maximowiczii*. Has gray-green leaves. Red flowers, ¾–2in (2–6cm) long, are bowl-shaped at the base, and, inside, have blackish-purple centers that are usually ringed with cream or yellow. Petals are broadly ovate. Z3–8.

Batalinii Group (syn. *T. batalinii)* have flowers with broadly ovate petals and a bowl-shaped base. Pale yellow petals are darker yellow or brown at bases inside.

Batalinii Group 'Apricot Jewel' has flowers that are orange-red outside, yellow inside; **Batalinii Group 'Bright Gem'**, has yellow flowers flushed with orange; **Batalinii Group 'Bronze Charm'**, bears yellow flowers with bronze feathering. **Maximowiczii Group** (syn. *T. maximowiczii*) has gray-green leaves and bright red flowers, ¾–2½in (2–6cm) long. Broadly ovate petals, with white-bordered, black centers, are bowl-shaped at the base.

***T.* 'Lustige Witwe'**, syn. *T.* 'Merry Widow', Div. 3. Mid- to late spring-flowering bulb. Flowers have deep glowing red petals margined white. Z3–8

***T.* 'Madame Lefeber'**, syn. *T.* 'Red Emperor' (illus. p.401), Div. 13. Early to mid-spring-flowering bulb. H 14–16in (35–40cm). Produces very large, brilliant red flowers. Z3–8

***T.* 'Maja'** (illus. p.401), Div. 7. Late spring-flowering bulb. H 20in (50cm). Has egg-shaped, pale yellow flowers, with fringed petals, that are bronze-yellow at the base. Anthers are yellow. Z3–8

***T.* 'Margot Fonteyn'**, Div. 3. Mid- to late spring-flowering bulb. H 16–18in (40–45cm). Flowers have yellow-margined, bright red petals, each with a yellow base inside. Anthers are black. Z3–8

T. marjolletii, Div. 15. Mid-spring-flowering bulb. H 16–20in (40–50cm)). Produces flowers, 1½–2½in (4–6cm) long and bowl-shaped at the base, with broadly ovate, creamy-white petals, margined and marked deep pink. Z3–8

***T.* 'Maureen'**, Div. 5. Late spring-flowering bulb. H 28in (70cm). Bears marble-white flowers. Z3–8

T. maximowiczii. See *T. linifolia* Maximowiczii Group.

***T.* 'Menton'** (illus. p.401), Div. 5. Late spring-flowering bulb. H 2ft (60cm). Flowers have light orange-margined, rose-pink petals with bright yellow and white bases. Anthers are yellow. Z3–8

***T.* 'Merry Widow'.** See *T.* 'Lustige Witwe'.

***T.* 'Monte Carlo'**, Div. 2. Early spring-flowering bulb. H 16in (40cm). Has double, bright yellow flowers decorated with sparse, red streaks. Z3–8
***T.* 'Negrita'** (illus. p.401), Div. 3. Mid- to late spring-flowering bulb. H 1½ft (45cm). Produces deep purple flowers with red-purple streaks. Z3–8
***T.* 'New Design'**, Div. 3. Mid-spring-flowering bulb. H 16in (40cm). Flowers have yellow petals that fade to pinkish-white and are margined red outside and marked apricot inside. Leaves have pinkish-white margins. Z3–8
***T.* 'Orange Emperor'**, Div. 13. Early to mid-spring-flowering bulb. H 16in (40cm). Flowers are bright orange, with a yellow base inside and have black anthers. Z3–8
***T.* 'Orange Triumph'**, Div. 11. Late spring-flowering bulb. H 20in (50cm). Bears double, soft orange-red flowers flushed with brown, and yellow margins. Z3–8
***T.* 'Oranje Nassau'**, Div. 2. Early spring-flowering bulb. H 10–12in (25–30cm). Bears double, blood-red flowers flushed fiery orange-red. Z3–8
***T.* 'Oratorio'**, Div. 14. Mid- to late spring-flowering bulb. H 8in (20cm). Has brown-mottled, gray-green leaves. Broadly urn-shaped flowers are rose-pink outside, apricot-pink inside with black bases. Z3–8
T. orphanidea (illus. p.401), Div. 15. Mid-spring-flowering bulb. H 4–12in (10–30cm). Green leaves often have reddish margins. Stem has 1–4 flowers, 1¼–2½in (3–6cm) long and tapered at the base. Oval petals are orange-brown, tinged outside green and often purple. Z3–8. **Whittallii Group** (syn. *T. whittallii*) illus. p.407
***T.* 'Page Polka'**, Div. 3. Mid-spring-flowering bulb. Large, deep red flowers have white bases and are striped with white. Anthers are yellow. Z3–8
***T.* 'Palestrina'**, Div. 5. Late spring-flowering bulb. H 1½ft (45cm). Petals of large, salmon-pink flowers are green outside. Z3–8
***T.* 'Peach Blossom'**, Div. 2. Early spring-flowering bulb. H 10–12in (25–30cm). Produces double, silvery-pink flowers flushed with deep pink. Z3–8
***T.* 'Peer Gynt'**, Div. 3. Mid- to late spring-flowering bulb. H 20in (50cm). Purple-margined, fuchsia-red flowers have white bases spotted with yellow. Anthers are purplish-gray. Z3–8
***T.* 'Plaisir'**, Div. 14. Mid- to late spring-flowering bulb. H 6–8in (15–20cm). Has gray-green leaves mottled with red-brown. Bears broadly urn-shaped, pale yellow-margined, deep pinkish-red flowers, with black-and-yellow bases. Z3–8
T. polychroma. See *T. biflora*.
***T. praestans* 'Fusilier'**, Div. 15. Early spring-flowering bulb. H 4–18in (10–45cm). Has a minutely downy stem and downy, gray-green leaves. Stem bears 3–5 flowers that are 2¼–2½in (5.5–6.5cm) long and bowl-shaped at the base. Oval petals are orange-scarlet. **'Unicum'** (illus. p.401) has leaves that are margined pale yellow. Flowers have bright red petals with yellow bases and blue-black anthers.
'Van Tubergen's Variety' produces 2–5 flowers per stem that are often yellow at the base; it increases very freely. Z3–8.
***T.* 'Prinses Irene'** (illus. p.401), Div. 1. Early spring-flowering bulb. H 12–14in (30–35cm). Produces orange flowers streaked with purple. Z3–8
T. pulchella. See *T. humilis* var. *pulchella*.
***T.* 'Purissima'**, syn. *T.* 'White Emperor' (illus. p.400), Div. 13. Early to mid-spring-flowering bulb. H 14–16in (35–40cm). Flowers are pure white. Z3–8
***T.* 'Queen of Night'** (illus. p.401), Div. 5. Late spring-flowering bulb. H 2ft (60cm). The darkest of all tulips, has long-lasting, very dark maroon-black flowers on sturdy stems. Useful for bedding. Z3–8
***T.* 'Queen of Sheba'**, Div. 6. Late spring-flowering bulb. H 2ft (60cm). Bears orange-margined, glowing, brownish-red flowers. Z3–8
***T.* 'Red Emperor'.** See *T.* 'Madame Lefeber'.
***T.* 'Red Parrot'**, Div. 10. Late spring-flowering bulb. H 2ft (60cm). Large, raspberry-red flowers are borne on strong stems. Z3–8
***T.* 'Red Riding Hood'** (illus. p.401), Div. 14. Late spring-flowering bulb. H 8in (20cm). Has vivid, black-based, scarlet flowers amid spreading, dark green leaves mottled brownish-purple. Z3–8
***T. saxatilis* Bakeri Group**, syn. *T. bakeri* (illus. p.400), Div. 15. Early spring-flowering bulb. H 6–18in (15–45cm). Has shiny, green leaves. Stem produces 1–4 scented flowers, 1½–2¼in (4–5.5cm) long and tapered at the base. Oval, pink to lilac petals are yellow at the base inside. Z3–8
***T.* 'Shakespeare'**, Div. 12. Early spring-flowering bulb. H 5–6in (12–15cm). Petals are deep red outside, margined salmon, and salmon inside, flushed red with a yellow base. Z3–8
***T.* 'Shirley'** (illus. p.400), Div. 3. Mid- to late spring-flowering bulb. H 20in (50cm). Bears ivory-white flowers with pinkish-purple petal edges and flecks. Z3–8
T. sprengeri (illus. p.401), Div. 15. Late spring- and early summer-flowering bulb. H 1–1½ft (30–45cm). Flowers are 1¼–2½in (4.5–6.5cm) long and tapered at the base. They have narrowly ovate, orange-red petals, the outer 3 with buff-yellow backs. Latest-flowering tulip; increases rapidly. Z3–8
***T.* 'Spring Green'** (illus. p.400), Div. 8. Late spring-flowering bulb. H 14–15in (35–38cm). Bears white flowers feathered with green. Anthers are pale green. Z3–8
T. sylvestris, syn. *T. australis* (illus. p.401), Div. 15. Early spring-flowering bulb. H 4–18in (10–45cm). Yellow flowers, usually borne singly, are 1–2½in (3.5–6.5cm) long and tapered at the base. Narrowly ovate petals are often tinged green outside. Z3–8
T. tarda, syn. *T. dasystemon* of gardens, Div. 15. Early spring-flowering bulb. H to 6in (15cm). Has glossy, green leaves. Flowers, 4–6 per stem, are 1¼–1½in (3–4cm) long and tapered at the base. Oval, white petals have yellow lower halves inside and are tinged with green and sometimes red outside. Suitable for a rock garden or raised bed. Z3–8
***T.* 'Toronto'**, Div. 14. Mid- to late spring-flowering bulb. H 1ft (30cm). Has mottled leaves and 2 or 3 long-lasting flowers per stem. Open, broadly cup-shaped flowers have pointed, bright red petals, each with a brownish-green-yellow base inside. Anthers are bronze. Z3–8
T. turkestanica (illus. p.400), Div. 15. Early spring-flowering bulb. H 4–12in (10–30cm). Has a hairy stem and gray-green leaves. Unpleasant-smelling flowers, up to 12 per stem, are ⅝–1½in (1.5–3.5cm) long and tapered at the base. Oval, white petals are flushed green or pink outside; flowers have yellow or orange centers inside. Z3–8
***T.* 'Uncle Tom'** (illus. p.401), Div. 11. Late spring-flowering bulb. H 20in (50cm). Produces double, maroon-red flowers. Z3–8
T. undulatifolia, syn. *T. eichleri*. Div. 15. Early to mid-spring-flowering bulb. H 6–20in (15–50cm). Has a downy stem and gray-green leaves. Flowers, 1¼–3in (3–8cm) long, are bowl-shaped at the base. Narrowly ovate, red or orange-red petals each have a pale red or buff back and a yellow-bordered, dark green or black blotch at the base inside. Z3–8
***T.* 'Union Jack'**, Div. 5. Late spring-flowering bulb. H 2ft (60cm). Flowers have ivory-white petals, with deep pinkish-red "flames" and blue-margined, white bases. Z3–8
T. urumiensis, Div. 15. Early spring-flowering bulb. H 4–8in (10–20cm). Stem is mostly below soil level. Leaves are green or grayish-green. Producs 1 or 2 flowers, each 1½in (4cm) long and tapered at the base. Narrowly ovate, yellow petals are flushed mauve or red-brown outside. Is useful for a rock garden. Z4–7
T. violacea. See *T. humilis* Violacea Group.
***T.* 'West Point'**, Div. 6. Late spring-flowering bulb. H 20in (50cm). Primrose-yellow flowers have long-pointed, recurved petals. Z4–7
***T.* 'White Dream'** (illus. p.400), Div. 3. Mid- to late spring-flowering bulb. H 16–18in (40–45cm). Flowers are white with yellow anthers. Z3–8
***T.* 'White Emperor'.** See *T.* 'Purissima'.
***T.* 'White Parrot'**, Div. 10. Late spring-flowering bulb. H 22in (55cm). Large flowers have ruffled, white petals, flecked green at the base. Good for cutting. Z3–8
***T.* 'White Triumphator'** (illus. p.400), Div. 6. Late spring-flowering bulb. H 26–28in (65–70cm). White flowers have elegantly reflexed petals. Z3–8
T. whittallii. See *T. orphanidea* Whittallii Group.
***T.* 'Yokohama'**, Div. 1. Early to mid-spring-flowering bulb. H 14in (35cm). Pointed flowers are deep yellow. Z3–8

Tunica saxifraga. See *Petrorhagia saxifraga*.

TURRAEA

MELIACEAE

Genus of evergreen trees and shrubs, grown for their flowers and foliage. Frost tender. Prefers full sun. Needs fertile, well-drained soil. Water freely in full growth, less at other times. Young plants may need growing point removed to promote branching. Prune after flowering if necessary. Propagate by seed in spring or by semiripe cuttings in summer.
T. obtusifolia. Evergreen, rounded, bushy, arching shrub. Has ovate to lance-shaped leaves. Bears fragrant, white flowers from fall to spring, followed by orange-yellow fruits like tiny, peeled tangerines. Z9–11

TWEEDIA

APOCYNACEAE/ASCLEPIADACEAE

Genus of evergreen, twining subshrubs; only one species is in general cultivation. Frost tender. In cool climates, may be grown as an annual. Requires a position in sun and in well-drained soil. Pinch out tips of shoots to encourage branching. Propagate by seed in spring.
T. caerulea, syn. *Oxypetalum caeruleum*. Herbaceous, twining climber with white-haired stems. H to 3ft (1m). Pink-flushed buds open to reveal small, fleshy, pale blue flowers, maturing purple, which are borne in summer and early fall. Produces green fruits to 6in (15cm) long. Z10–12 (min. 3–5°C/39–41°F)

TYLECODON

CRASSULACEAE

Genus of deciduous, bushy, winter-growing, succulent shrubs with very swollen stems. Frost tender. Requires a sunny position and very well-drained soil. Propagate by seed or stem cuttings in summer. ⓣ The leaves of *T. wallichii* are highly toxic if ingested.
T. paniculatus, syn. *Cotyledon paniculata* (Butter tree). Deciduous, bushy, succulent shrub. H and S 6ft (2m). Swollen stem and branches have papery, yellow coverings. Leaves are oblong to ovate, fleshy, and bright green. In summer, clusters of tubular, green-striped, red flowers are produced at the stem tips. Z10–12 (min. 45°F/7°C)
T. papillaris* subsp. *wallichii. See *T. wallichii*.
T. reticulatus, syn. *Cotyledon reticulata* (Barbed-wire plant). Deciduous, bushy, succulent shrub. H and S 1ft (30cm). Swollen branches bear cylindrical leaves in winter. Produces tubular, green-yellow flowers on a woody stem in fall. Z10–12 (min. 45°F/7°C)
T. wallichii, syn. *Cotyledon wallichii*, *T. papillaris* subsp. *wallichii*. Deciduous, bushy, succulent shrub. H and S 1ft (30cm). Has 1¼in (3cm) thick stems with cylindrical, grooved-topped, green leaves at tips. After leaf fall, stems are neatly covered in raised leaf bases. Bears tubular, yellow-green flowers, ¾in (2cm) long, in fall. Z10–12 (min. 45°F/7°C)

TYPHA

TYPHACEAE

Genus of deciduous, perennial, marginal water plants, grown for their decorative, cylindrical seed heads. Fully to frost hardy. Requires a position in sun or shade. Propagate in spring by seed or division.
T. latifolia (Bulrush) illus. p.442.
'Variegata' is a deciduous, perennial marginal water plant. H 3–4ft (90cm–1.2m), S indefinite. Strap-shaped, mid-green leaves have longitudinal, cream stripes. Produces spikes of beige flowers in late summer; these are followed by decorative, cylindrical, dark brown seed heads. Z2–11
T. minima illus. p.443.

UVW

UGNI

MYRTACEAE

Genus of densely leafy, evergreen shrubs or trees. *U. molinae*, the only species usually cultivated, is valued for its foliage, flowers, and fruit. Frost hardy to frost tender. Needs full sun or partial shade and moist but well-drained soil. Propagate by semiripe cuttings in late summer.

U. molinae, syn. *Eugenia ugni, Myrtus ugni.* Evergreen, upright, densely branched shrub. H 5ft (1.5m), S 3ft (1m). Glossy, dark green leaves are ovate. Bears fragrant, slightly nodding, cup-shaped, white-pink-tinted flowers in late spring, then aromatic, edible, spherical, dark red fruits. Good for hedging in mild areas. Z7–11. **'Flambeau'** has dark gray-green leaves margined creamy white and flushed pink when young.

ULEX

PAPILIONACEAE/LEGUMINOSAE

Genus of leafless, or almost leafless, shrubs that appear evergreen as a result of their year-round, green shoots and spines. Grown for its flowers in spring. Fully to frost hardy. Needs full sun, and prefers poor, well-drained, acidic soil. Trim each year after flowering to maintain compact habit. Straggly, old plants may be cut back hard in spring. Propagate by seed in fall. ⓘ The seeds may cause mild stomach upset if ingested.

U. europaeus (Gorse) illus. p.148. **'Flore Pleno'** is a leafless, or almost leafless, bushy shrub. H 3ft (1m), S 4ft (1.2m). In spring, bears profuse, fragrant, pealike, double, yellow flowers on leafless, dark green shoots. Z5–9

ULMUS

Elm

ULMACEAE

Genus of deciduous or, rarely, semi-evergreen trees and, very rarely, shrubs, often large and stately, grown for their foliage and habit. Inconspicuous flowers are borne in spring. Fully to frost hardy. Requires full sun and fertile, well-drained soil. Propagate by softwood cuttings in summer or by seed or suckers in fall. Susceptible to Dutch elm disease, which is quickly fatal, although *U. parvifolia* and *U. pumila* appear more resistant than other species and hybrids.

U. americana (American white elm, White elm). Deciduous, spreading tree. H and S 100ft (30m). Has gray bark and drooping branchlets. Large, ovate, dark green leaves are sharply toothed and rough-textured. Z2–9

***U.* 'Camperdownii'.** See *U. glabra* 'Camperdownii'.

U. carpinifolia. See *U. minor*.

U. glabra (Wych elm). Deciduous, spreading tree. H 35–40m (120–130ft), S 80ft (25m). Has broadly ovate, toothed, very rough, dark green leaves, often slightly lobed at tips. Tiny red flowers in early spring are followed by clusters of winged, green fruits on bare branches. Z5–7. **'Camperdownii'** (syn. *U.* 'Camperdownii') illus. p.88. **'Exoniensis'** (Exeter elm), H 50ft (15m), S 15ft (5m), is narrow with upright branches when young, later becoming more spreading.

U.* x *hollandica (Dutch elm). Vigorous, deciduous tree with a short trunk and spreading to arching branches. H 100ft (30m), S 80ft (25m). Has ovate, toothed, glossy, dark green leaves. Very susceptible to Dutch elm disease. Tiny red flowers in early spring are followed by winged, green fruit. Z5–9. **'Dampieri Aurea'**, H 20–25ft (6–8m), S 10–12ft (3–4m), is relatively slow-growing, with bright golden yellow leaves. Appears to be resistant to Dutch elm disease. **'Jacqueline Hillier'**, H and S 8ft (2.5m), is slow-growing and suitable for hedging. Small leaves, rough-textured and sharply toothed, form 2 rows on each shoot; they persist into early winter. **'Vegeta'** see *U.* x *vegeta*.

U. minor, syn. *U. carpinifolia* (Smooth-leaved elm). Deciduous, spreading tree with arching branches and pendent shoots. H 100ft (30m), S 70ft (20m). Small, ovate, toothed, glossy, bright green leaves turn yellow in fall. Tiny red flowers in early and mid-spring are followed by green, winged fruit. Z5–9

U. parvifolia (Chinese elm). Deciduous or semievergreen, rounded tree with pendent shoots and flaking bark, marked orange and brown. H 60ft (18m), S 25–40ft (8–12m). Small, ovate, glossy, dark green leaves last well into winter or, in mild areas, may persist until fresh growth develops. Tiny red flowers in late summer to fall are followed by winged, green fruit. Z4–9

U. procera (English elm). Vigorous, deciduous, spreading tree with a dense, dome-shaped head. H 130ft (40m), S 50ft (15m). Broadly ovate, toothed, rough, dark green leaves turn yellow in fall. Tiny red flowers in early spring are followed by winged, green fruit. Z5–9

U. pumila (Siberian elm). Deciduous, spreading, sometimes shrubby tree. H 70–100ft (20–30m), S 40ft (12m). Produces ovate, toothed, dark green leaves. Tiny red flowers in early spring are followed by winged, green fruit. Has some resistance to Dutch elm disease, but seedlings may be susceptible in hot summers. Z4–9

U.* x *vegeta, syn. *U.* x *hollandica* 'Vegeta' (Huntingdon elm). Fast-growing deciduous tree. H 120ft (35m), S 80ft (25m). Has upright central branches and pendent outer shoots. Broadly ovate leaves turn yellow in fall. Z5–9

UMBELLULARIA

Headache tree

LAURACEAE

Genus of one species of evergreen, spring-flowering tree, grown for its aromatic foliage, although the scent of the crushed leaves may induce headaches and nausea in some people. Fully hardy, but shelter from strong, cold winds when young. Requires sun and fertile, moist but well-drained soil. Propagate by seed in fall.

U. californica (Californian laurel) illus. p.69.

UMBILICUS

CRASSULACEAE

Genus of deciduous perennials with underground tubers and unusual, shield-shaped, succulent leaves, and one evergreen, perennial, creeping succulent with opposite leaves. Grown for their foliage and spikes or sprays of small flowers. Fully to frost hardy. Perennials require shade or partial shade and moist soil; *U. oppositifolius* requires sun or partial shade and moisture-retentive but free-draining soil. Best grown in a rock garden wall or crevice. Propagate from seed, offsets or cuttings. *U. oppositfolius* is susceptible to vine weevil.

U. oppositifolius, syn. *Chiastophyllum oppositifolium, Cotyledon simplicifolia* of gardens, illus. p.335. **'Jim's Pride'** is a creeping, evergreen perennial. H 6–8in (15–20cm), S 6in (15cm). Has large, oblong, serrated, succulent, dark green leaves, edged with creamy-yellow. Bears tiny yellow flowers in arching sprays in late spring and early summer. Z4–8

Urceolina peruviana. See *Stenomesson miniatum*.

Urginea maritima. See *Drimia maritima*.

URSINIA

ASTERACEAE/COMPOSITAE

Genus of annuals and evergreen perennials and subshrubs, grown mainly for their flower heads usually in summer, a few species for their foliage. Frost hardy to frost tender. Needs full l ight and well-drained soil. Water potted plants sparingly when not in full growth. Requires good ventilation when grown under glass. Propagate by seed or by greenwood cuttings in spring. Aphids can sometimes be troublesome.

U. anthemoides illus. p.322.

U. chrysanthemoides. Evergreen, bushy perennial. H and S 2ft (60cm) or more. Narrowly ovate, feathery, strongly scented, green leaves are 2in (5cm) long. Bears small, long-stalked, daisylike, yellow flower heads, sometimes coppery below, in summer. Z10–12 (min. 41–45°F/5–7°C)

U. sericea. Evergreen, bushy subshrub. H and S to 28in (70cm). Leaves are cut into an elegant filigree of very slender, silver-haired segments. Bears daisylike, yellow flower heads, ½in (4cm) across, in summer. Mainly grown for its foliage. Z10–12 (min. 41–45°F/5–7°C)

UTRICULARIA

LENTIBULARIACEAE

Genus of deciduous or evergreen, annual and perennial, carnivorous water plants with bladderlike, modified leaves that trap and digest insects. Most species in cultivation are free-floating. Fully hardy to frost tender. Some species are suitable only for tropical aquariums; those grown in outdoor pools require full sun. Thin out plants that are overcrowded or are laden with algae. Propagate by division of floating foliage in spring or summer.

***U. bisquamata* 'Betty's Bay'.** Small, terrestrial annual. H 6in (15cm), S 8in (20cm). Has tiny, linear leaves. From early summer to fall, bears large, pale yellow and lilac flowers. It produces no seed, so is not invasive. Z10–11

U. sandersonii. Deciduous perennial. H and S 4–20in (10–50cm). In summer, bears white or pale pink flowers, with a lavender-colored marking on the upper lip and base of the lower lip. Z10–11

UVULARIA

COLCHICACEAE

Genus of spring-flowering rhizomatous perennials that thrive in moist woodlands. Fully hardy. Requires partial shade and prefers moist but well-drained, peaty soil. Propagate by division in early spring, before flowering.

U. grandiflora (Bellwort, Merry-bells) illus. p.262.

U. perfoliata. Clump-forming perennial. H to 2ft (60cm), S 1ft (30cm). In spring, produces clusters of pendent, bell-shaped, pale yellow flowers with twisted petals on numerous slender stems, above stem-clasping, narrowly ovate, mid-green leaves. Z4–9

VACCINIUM

ERICACEAE

Genus of deciduous, semievergreen or evergreen shrubs and trees, grown for their foliage, fall color (on deciduous species), flowers and fruits, which are often edible. Fully to frost hardy. Needs sun or partial shade and moist but well-drained, peaty or sandy, acidic soil. Propagate by semiripe cuttings in summer or by seed in fall.

V. angustifolium* var. *laevifolium (Low-bush blueberry) illus. p.163.

V. arctostaphylos (Caucasian whortleberry). Deciduous, upright shrub. H 10ft (3m), S 6ft (2m). Has red-brown young shoots and ovate, dark green leaves that mature to red and purple in fall. Bell-shaped, white flowers, tinged with red, are produced in spreading racemes in early summer, followed by spherical, purplish-black fruits. Z5–9

V. corymbosum (Highbush blueberry) illus. p.150. **'Duke'** is an upright, deciduous shrub. H 5½ft (1.6m), S 5ft (1.5m). Has mid-green leaves that turn orange in fall. White late spring flowers are followed by medium-sized, edible, blue-black fruits. **'Pioneer'** illus. p.163. **'Spartan'**, H to 6ft (1.8m), S 5ft (1.5m), has large, sweet fruit. Z5–7

V. glaucoalbum illus. p.165.

V. myrtillus (Bilberry, Whortleberry). Deciduous, usually prostrate shrub. H to 1ft (30cm), S indefnite. Bears small, heart-shaped, leathery, bright green leaves. Pendent, bell-shaped, pale pink flowers in early summer are followed by edible, round, blue-black fruits. Z3–8

V. nummularia. Evergreen, prostrate shrub. H to 1ft (30cm), S to 2ft (60cm). Slender stems, covered in red-brown bristles, bear ovate, wrinkled, bright green leaves with red-brown bristles at their margins. Small racemes of bell-shaped, white to deep pink flowers at stem tips in early summer are followed

by small, round, black fruits. Suitable for a rock garden or peat bed. Needs partial shade. May also be propagated by division in spring. Z5–9
V. parvifolium illus. p.163.
V. vitis-idaea (Cowberry). Vigorous, evergreen, prostrate shrub, spreading by underground runners. H 10in (25cm), S indefinite. Forms hummocks of ovate, hard, leathery leaves. Bell-shaped, white to pink flowers are borne in nodding racemes from early summer to fall. Flowers are followed by bright red fruits in fall–winter. May also be propagated by division in spring. Z3–8. **'Minus'** see *V.v-i.* subsp. *minus*. **subsp. *minus*** (syn. *V.v-i.* 'Minus') illus. p.351.

VALERIANA
Valerian
CAPRIFOLIACEAE

Genus of summer-flowering annuals, often rhizomatous or tap-rooted herbaceous perennials, semievergreen subshrubs, and usually evergreen shrubs, suitable for growing in borders and rock gardens. Fully hardy. Requires a position in sun and well-drained soil. Propagate by division in fall, but *V. officinalis* is best propagated by seed in spring.
V. officinalis (Cat's valerian, Common valerian) illus. p.231.
***V. phu* 'Aurea'** illus. p.262.

VALLEA
ELAEOCARPACEAE

Genus of evergreen shrubs or trees, grown for their habit, foliage and flowers. Frost hardy, but best kept at a minimum of 37–41°F (3–5°C) to prevent foliage being damaged by cold. Prefers a position in full sun and humus-rich, well-drained soil. In cold areas, grow in a cool greenhouse; in warmer areas, use in a courtyard garden or border, or grow against a warm sunny wall. Water containerized plants freely during the growing season, moderately at other times. Untidy growth may be cut out in early spring. Propagate by seed in spring or by semiripe cuttings in summer. Red spider mite may be a nuisance.
***V. stipularis*.** Evergreen, erect, then loose and spreading shrub. H and S 10–15ft (3–5m). Leaves are lance-shaped to rounded and lobed, deep green above, gray beneath. Small, cup-shaped flowers, each with 5 deep pink petals that have 3 lobes, are borne in small, terminal and lateral clusters in spring–summer. Z9–11

VALLISNERIA
HYDROCHARITACEAE

Genus of evergreen, perennial, submerged water plants, grown for their foliage. Suitable for pools and aquariums. Frost tender. Requires sun or partial shade and deep, clear water. Remove fading foliage, and thin overcrowded plants as necessary. Propagate by division in spring–summer.
V. americana, syn. *V. gigantea*. Vigorous, evergreen, perennial, submerged water plant. S indefinite. Quickly grows to form colonies of long, strap-shaped, mid-green leaves. Bears insignificant, greenish flowers all year-round. Z11–12 (min. 50°F/10°C)
***V. gigantea*.** See *V. americana*.
V. spiralis (Eel grass, Tape grass) Vigorous, evergreen, perennial, submerged water plant. S indefinite. Forms a mass of long, strap-shaped, mid-green leaves, but on a smaller scale than *V. americana*. Insignificant, greenish flowers are borne year-round. Z10–11 (min. 41°F/5°C)

***Vallota speciosa*.** See *Cyrtanthus elatus*.

VANCOUVERIA
BERBERIDACEAE

Genus of perennials, some of which are evergreen, suitable for groundcover. Fully hardy. Prefers cool, partially shaded positions and moist, peaty soil. Propagate by division in spring.
***V. chrysantha*.** Evergreen, sprawling perennial. H to 1ft (30cm), S to 2ft (60cm). Ovate, dark green leaves borne on the flower stems are divided into rounded diamond-shaped leaflets with thickened, undulating margins. Loose sprays of small, bell-shaped, yellow flowers are produced in spring. Z7–9
***V. hexandra*.** Vigorous, spreading perennial. H and S to 16in (40cm). Leathery leaves are divided into almost hexagonal leaflets. Produces open sprays of many tiny, white flowers in late spring and early summer. Provides good woodland groundcover. Z5–7

VANDA
ORCHIDACEAE

See also ORCHIDS.
***V.* Rothschildiana gx** (illus. p.466). Evergreen, epiphytic orchid for a cool or intermediate greenhouse. H 2ft (60cm), S 1ft (30cm). Sprays of dark-veined, violet-blue flowers, 4in (10cm) across, are borne twice a year in varying seasons. Has narrowly ovate, rigid leaves, 4–5in (10–12cm) long. Grow in a hanging basket and provide good light in summer. Z11–12 (min. 61°F/16°C; max. 86°F/30°C)

VELLOZIA
VELLOZIACEAE

Genus of evergreen perennials, grown for their showy flowers. Frost tender. Grow in full sun and moderately fertile, sharply drained soil. Propagate by seed or division in spring.
V. elegans, syn. *Barbacenia elegans, Talbotia elegans*. Evergreen, mat-forming perennial with slightly woody stems. H 6–8in (15–20cm), S 8in (20cm). Lance-shaped, leathery, dark green leaves, to 8in (20cm) long, have a V-shaped keel. In late spring, bears solitary, small, star-shaped, white flowers on slender stems above leaves. Z12 (min. 61°F/16°C)

VELTHEIMIA
ASPARAGACEAE

Genus of spring-flowering bulbs with dense spikes of pendent, tubular flowers and rosettes of basal leaves. Frost tender. Needs good light, to keep foliage compact and to develop flower colors fully. Requires well-drained soil. Plant in fall with bulb tips just above soil surface. Water moderately in growth and reduce watering in summer. Propagate by seed or by offsets in fall.
***V. bracteata*,** syn. *V. undulata, V. viridifolia*, illus. p.414.
***V. undulata*.** See *V. bracteata*.
***V. viridifolia*.** See *V. bracteata*.

x ***Venidioarctotis*.** See *Arctotis*.

VERATRUM
MELANTHIACEAE/LILIACEAE

Genus of perennials, with poisonous black rhizomes, grown for their striking, erect panicles of flowers. Fully to frost hardy. Requires partial shade and fertile, moist soil. Ideal for a woodland or wild garden. Propagate by division in fall or early spring, or by seed as soon as ripe.
⚠ All parts are highly toxic if ingested. Contact with foliage may irritate the skin.
V. album (White false hellebore). Clump-forming perennial. H 6ft (2m), S 2ft (60cm). Basal leaves are pleated, ovate and dark green. Stems bear dense, terminal panicles of saucer-shaped, yellowish-white flowers in summer. Z3–7.
'Lorna's Green' produces pendent panicles of green flowers.
***V. californicum*.** Upright, rhizomatous perennial. H to 8ft (2.5m), S to 2ft (60cm). Has ovate, pleated basal leaves, hairless above and curly-hairy beneath. In summer, bears branched, stiffly erect panicles of star-shaped, creamy white and green flowers, with each petal deep green at the base and veined green. Z4–8
V. nigrum (Black false hellebore) illus. p.216.

VERBASCUM
Mullein
SCROPHULARIACEAE

Genus of mainly summer-flowering biennials, with a few annuals, perennials, and subshrubs, some of which are semi-evergreen or evergreen. Grown mainly for their tall stems of flowers borne over a long period. Fully to frost hardy. Tolerates shade, but prefers an open, sunny site and well-drained soil. Propagate species by seed in spring or late summer, or by root cuttings in winter, selected forms by root cuttings only. Some species self-seed freely.
V. bombyciferum, syn. *V. broussa*. Evergreen, erect biennial. H 5–6ft (1.5–2m), S to 2ft (60cm). Ovate leaves and stems are covered with silver hairs. Produces upright racemes densely set with 5-lobed, yellow flowers in summer. Z4–10
***V. broussa*.** See *V. bombyciferum*.
***V.* 'Caribbean Crush'.** Upright, rosette-forming perennial. H 4ft (1.2m), S 5ft (1.5m). Has ovate-oblong, toothed, woolly, gray-green leaves. From late spring to summer, bears saucer-shaped flowers in tones of apricot, yellow, pink, and copper-orange, all on the same plant. Z5–8
***V. chaixii*.** Erect perennial, covered with silvery hairs. H to 3ft (90cm), S 1½ft (45cm). Has ovate, toothed, rough, nettlelike leaves. Produces slender spires of 5-lobed, yellow, sometimes white flowers, with purple stamens, in summer. Z5–8
***V.* 'Christo's Yellow Lightning'.** Vigorous, upright, rosette-forming perennial. H 5ft (1.5m) or more, S 2ft (60cm). Has broadly lance-shaped, wavy-edged, gray-green leaves. In summer, bears saucer-shaped, pale yellow flowers. Z5–8
***V.* 'Cotswold Beauty'** illus. p.246.
***V.* 'Cotswold Queen'.** Short-lived, rosette-forming perennial. H 4ft (1.2m), S 1ft (30cm). Throughout summer, bears saucer-shaped, yellow flowers on stems that arise from ovate, mid-green leaves. Z5–8
V. dumulosum illus. p.345.
***V.* 'Gainsborough'** illus. p.243.
***V.* 'Letitia'** illus. p.343.
V. lychnitis (White mullein). Slow-growing, evergreen, upright, branching biennial. H 2–3ft (60–90cm), S 2ft (60cm). Has lance-shaped, dark gray-green leaves. Flattish, 5-lobed, white flowers are borne on branching stems in summer. Z5–9
***V. nigrum*.** Semievergreen, clump-forming perennial. H 3ft (90cm), S 2ft (60cm). Bears narrow spikes of small, 5-lobed, purple-centered, yellow flowers during summer and fall. Oblong, mid-green leaves are downy beneath. Z4–8
V. olympicum illus. p.219.
***V.* 'Pink Domino'.** Short-lived, rosette-forming perennial. H 4ft (1.2m), S 1ft (30cm). Produces branched racemes of 5-lobed, rose-pink flowers throughout summer, above ovate, mid-green leaves. Z5–11

VERBENA
VERBENACEAE

Genus of summer- and fall-flowering annuals, perennials, and subshrubs. Fully hardy to frost tender. Prefers sun and well-drained soil. Propagate by stem cuttings in late summer or fall, or by seed in fall or spring.
V. bonariensis, syn. *V. patagonica*, illus. p.221.
***V. chamaedrifolia*.** See *Glandularia peruviana*.
***V. chamaedrioides*.** See *Glandularia peruviana*.
***V.* x *hortensis*.** See *Glandularia* x *hybrida*.
***V.* x *hybrida*.** See *Glandularia* x *hybrida*.
***V. patagonica*.** See *V. bonariensis*.
V. rigida, syn. *V. venosa*, illus. p.269.
***V.* 'Sissinghurst'.** See *Glandularia* 'Sissinghurst'.
***V. venosa*.** See *V. rigida*.

VERONICA
PLANTAGINACEAE/SCHROPHULARIACEAE

Genus of annuals, perennials, and mostly deciduous subshrubs, grown for their purple, blue, pink or white flowers. Fully to frost hardy. Some need sun and well-drained soil, others prefer a moist site in sun or partial shade. Grow taller species in a mixed or herbaceous border; cushion- or mat-forming species are ideal for a rock garden. Propagate by division in spring or fall, by softwood or semiripe cuttings in summer, or by seed in fall.
***V. austriaca*.** Mat-forming or upright perennial. H and S 10–20in (25–50cm). Leaves are very variable: from broadly ovate to narrowly oblong, and from entire to deeply cut and fernlike. Short, dense or lax racemes of small, saucer-shaped, bright blue flowers are produced in early summer. Suits a rock garden or bank. Z3–8.

subsp. *teucrium* (syn. *V. teucrium*) illus. p.343. **subsp. *teucrium* 'Kapitän'** illus. p.343. **subsp. *teucrium* 'Royal Blue'** has deep royal-blue flowers.
V. beccabunga (Brooklime) illus. p.442.
***V. cinerea*.** Spreading, much-branched, woody-based perennial. H 6in (15cm), S 1ft (30cm). Produces small, linear, occasionally ovate, hairy, silvery-white leaves. Trailing flower stems bear saucer-shaped, deep blue to purple flowers, with white eyes, in early summer. Suitable for a sunny rock garden. Z5–8
V. fruticans (Rock speedwell). Deciduous, upright to procumbent subshrub. H to 3in (8cm), S to 8in (20cm). Leaves are ovate and green. Spikes of saucer-shaped, bright blue flowers, each with a red eye, are produced in summer. Suitable for a rock garden. Z4–9
V. gentianoides illus. p.271.
***V. incana*.** See *V. spicata* subsp. *incana*.
***V. longifolia*.** Variable, upright perennial. H to 4ft (1.2m), S 1ft (30cm). In late summer and early fall, bears long, terminal racemes of star-shaped, lilac-blue flowers on stems with narrowly ovate to lance-shaped, toothed, mid-green leaves. Z4–8
***V. pectinata*.** Dense, mat-forming perennial, sometimes semierect. H and S 8in (20cm). Has small, narrowly ovate, hairy leaves and bears loose sprays of saucer-shaped, soft blue to blue-violet flowers in summer. Good for a rock garden or bank. Z4–9. **'Rosea'**, H 3in (8cm), has rose-lilac flowers.
V. peduncularis of gardens. See *V. umbrosa*.
***V. perfoliata*.** See *Parahebe perfoliata*.
V. prostrata, syn. *V. rupestris*, (Prostrate speedwell), illus. p.343.
'Spode Blue' is a dense, mat-forming perennial. H to 1ft (30cm), S indefinite. Upright spikes of small, saucer-shaped, china-blue flowers are produced in early summer. Leaves are narrowly ovate and toothed. **'Trehane'** illus. p.343. H5
***V. rupestris*.** See *V. prostrata*.
V. spicata (Spiked speedwell). Clump-forming perennial. H 1–2ft (30–60cm), S 1½ft (45cm). Spikes of small, star-shaped, bright blue flowers are borne in summer above narrowly ovate, toothed, mid-green leaves. (borderline) Z3–8. **subsp. *incana*** (syn. *V. incana*) illus. p.271. **'Romiley Purple'** illus. p.239.
***V. teucrium*.** See *V. austriaca* subsp. *teucrium*.
V. umbrosa, syn. *V. peduncularis* of gardens, illus. p.271. **'Georgia Blue'**, is a vigorous, mat-forming perennial. H to 4in (10cm), S 2ft (60cm) or more. Ovate to lance-shaped, toothed leaves are glossy, purple-tinged, mid-green. In early spring–summer, bears racemes of saucer-shaped, deep blue flowers, with small white eyes. Easily grown and free-flowering. Z4–8
***V. virginica*.** See *Veronicastrum virginicum*.

VERONICASTRUM

PLANTAGINACEAE/SCROPHULARIACEAE

Genus of perennials, grown for their elegant, pale blue flowers. Fully hardy. Requires a position in sun and moist soil. Propagate by division in spring or fall, by softwood or semiripe cuttings in summer or by seed in fall.
V. virginicum, syn. *Veronica virginica*. Upright perennial. H to 6ft (2m), S 1½ft (45cm). In late summer, racemes of small, star-shaped, purple-blue or pink flowers crown stems clothed with whorls of narrowly lance-shaped, dark green leaves. Z3–8. **f. *album*** has spires of small, white flowers in late summer, with pink-flushed bases and pink anthers, on stems clothed with whorls of narrow, dark green leaves. **'Fascination'** illus. p.220.

VESALEA

CAPRIFOLIACEAE

Genus of evergreen, summer-flowering shrubs, sometimes included in *Abelia* or *Linnaea*. Frost hardy to half hardy. Needs well-drained soil and a position in sun—preferably against a sunny wall in all but the mildest areas. Propagate by softwood or semiripe cuttings in summer.
V. floribunda, syn. *Abelia floribunda*. Evergreen, arching shrub. H 10ft (3m), S 12ft (4m). Has ovate, glossy, dark green leaves. In early summer, produces profuse clusters of pendent, tubular, bright cerise flowers, with 5-lobed, green calyces at the end of short shorts from the previous year's growth. Z8–9

VESTIA

SOLANACEAE

Genus of one species of evergreen shrub, grown for its attractive, but malodorous, flowers and foliage. Frost hardy, but in cold areas is best cut to ground level and grown against a south-facing wall. Needs sun and well-drained soil. Propagate by semiripe cuttings in summer or by seed in fall.
V. foetida, syn. *V. lycioides*, illus. p.194.
***V. lycioides*.** See *V. foetida*.

VIBURNUM

ADOXACEAE/CAPRIFOLIACEAE

Genus of deciduous, semievergreen or evergreen shrubs, sometimes trees, grown for their foliage, fall color (in many deciduous species), flowers and, often, fruits. Fruiting is generally most prolific when several plants of different clones are planted together. Fully to frost hardy. Grow in sun or partial shade and in deep, fertile, not too dry soil. To thin out overgrown plants, cut out some older shoots after flowering. Propagate by cuttings (softwood for deciduous species, semiripe for evergreens) in summer or by seed in fall. ⓣ The fruits of viburnums may cause mild stomach upset if ingested. See also feature panel p.142.
V. betulifolium illus. p.142. Deciduous, upright, arching shrub. H and S 10ft (3m). Bright green leaves are slightly glossy beneath. Heads of small, white flowers in early summer are succeeded by profuse nodding clusters of decorative, bright red fruits in fall–winter. Z5–9
***V.* x *bodnantense* 'Charles Lamont'.** Deciduous, upright shrub. H 10ft (3m), S 6ft (2m). Ovate, toothed, dark green leaves are bronze when young. Clusters of fragrant, tubular, bright pink flowers are borne from late fall to early spring. Z6–9. **'Dawn'** illus. p.143.
'Deben' bears tubular, white flowers, tinted with pink.
***V.* x *burkwoodii*.** Semievergreen, bushy, open shrub. H and S 8ft (2.5m). Rounded heads of fragrant, tubular, pink, then white flowers are borne amid ovate, glossy, dark green leaves from mid- to late spring. Z4–8. **'Anne Russell'**, H and S 5ft (1.5m), is deciduous and has very fragrant, white flowers. **'Mohawk'** has very fragrant white flowers with red backs, that are bright red in bud, and glossy green leaves that turn orange-red in fall. **'Park Farm Hybrid'** bears very fragrant, white flowers that are slightly pink in bud, and older leaves turn bright red in fall.
V.* x *carlcephalum illus. p.111.
V. carlesii illus. p.146. **'Aurora'** is a deciduous, bushy, dense shrub. H and S 6ft (2m). Broadly ovate leaves are bronze when young and turn purple-red in fall. From mid- to late spring, bears rounded heads of dark red buds, opening to pinkish white flowers. **'Diana'** has red buds that open to very fragrant, tubular, pink flowers fading to white. Z4–7
***V. cinnamomifolium*.** Evergreen, bushy or treelike shrub. H and S 15ft (5m). Large, ovate leaves, each have 3 prominent veins. Bears broad clusters of small, star-shaped, white flowers in early summer, then egg-shaped, blue fruits. Z7–9
V. davidii illus. p.165.
***V.* 'Eskimo'.** Mound-forming, compact, semievergreen shrub. H and S 5ft (1.5m). Produces ovate, leathery, glossy, dark green leaves. In mid- and late spring, pink-tinged cream buds open to tubular, pure white flowers. Z6–8
V. farreri, syn. *V. fragrans*, illus. p.143. **'Candidissimum'** is a deciduous, upright shrub. H 10ft (3m), S 6ft (2m). Ovate, toothed, dark green leaves are pale green when young. Produces clusters of fragrant, tubular, pure white flowers in late fall and during mild periods in winter and early spring. Z5–8
***V. fragrans*.** See *V. farreri*.
***V. furcatum*.** Large, deciduous shrub. H and S 6–12ft (2–4m). Broadly ovate and irregularly toothed leaves turn red and purple in fall. In late spring or early summer, produces small, scented, white flowers, followed by red berries that turn purplish-black. Z5–9
***V.* x *globosum* 'Jermyns Globe'** illus. p.120.
***V.* x *hillieri* 'Winton'.** Upright, spreading, semievergreen shrub. H and S 10–12ft (3–4m). Has narrowly ovate leaves, flushed copper when young, with bronze-red winter color. In early summer, bears creamy white flowers, followed by small, ovate, red fruits, which turn deep maroon and black. Z5–8
V.* x *juddii illus. p.146.
V. lantana (Wayfaring tree). Vigorous, deciduous, upright shrub. H 15ft (5m), S 12ft (4m). Has broadly ovate, gray-green leaves that redden in fall, flattened heads of small, 5-lobed, white flowers in late spring and early summer, then egg-shaped, red fruits that ripen to black. Z4–7
V. lentago (Sheepberry). Vigorous, deciduous, upright shrub. H 12ft (4m), S 10ft (3m). Ovate, glossy, dark green leaves turn red and purple in fall. Flattened heads of scented, star-shaped, white flowers in late spring–early summer, are followed by egg-shaped, blue-black fruits. Z2-8
***V. mariesii*.** See *V. plicatum* f. *tomentosum* 'Mariesii'.
V. odoratissimum (Sweet viburnum). Evergreen, bushy shrub. H and S 15ft (5m). Clusters of small, fragrant, star-shaped, white flowers, borne amid ovate, leathery, glossy, dark green leaves in late spring, are followed by egg-shaped, red fruits that ripen to black. Z8–10
V. opulus (Guelder rose). Vigorous, deciduous, bushy shrub. H and S 12ft (4m). Bears broadly ovate, lobed, deep green leaves that redden in fall and, in late spring and early summer, flattened, lace-caplike heads of white flowers. Produces large bunches of spherical, bright red fruits. Z3–8. **'Compactum'** illus. p.162.
'Roseum' (syn. *V.o.* 'Sterile'; Snowball tree), H and S to 12ft (4m), has a rounded habit, with leaves that become purple-tinted in fall. Bears large, white or green-tinted white flowers, which may turn pink.
'Sterile' see *V.o.*'Roseum'.
'Xanthocarpum' has yellow fruits and mid-green leaves that become yellow in fall.
V. plicatum (Japanese snowball tree). Deciduous, bushy, spreading shrub. H 10ft (3m), S 12ft (4m). Leaves are ovate, toothed, deeply veined, and dark green, turning reddish-purple in fall. Dense, rounded heads of large, sterile, flattish, white flowers are borne along branches in late spring and early summer. Z5–8.
f. *plicatum* 'Nanum' see *V.p.* f. *tomentosum* 'Nanum Semperflorens'.
f. *plicatum* 'Popcorn' is compact and early-flowering, bearing numerous creamy white flower heads. **f. *tomentosum*** has tiered branches, flattish, lacecaplike flower heads and red fruits, ripening to black.
f. *tomentosum* 'Cascade' is reliably free-fruiting. **f. *tomentosum* 'Mariesii'** (syn. *V. mariesii*) illus. p.110.
f. *tomentosum* 'Nanum Semperflorens' (syn. *V.p.* f. *plicatum* 'Nanum', *V.p.* f. *tomentosum* 'Watanabe', *V. semperflorens*), H 6ft (2m), S 5ft (1.5m), is a slow-growing, conical, dense shrub, with small flower heads from late spring to early fall. **f. *tomentosum* 'Pink Beauty'** (illus. p.142) is a deciduous, bushy shrub, with dark green leaves, turning reddish-purple in fall. In late spring and early summer, bears white, later pink, blooms, followed by red, then black, fruits.
f. *tomentosum* 'Watanabe' see *V.p.* f. *tomentosum* 'Nanum Semperflorens'.
***V.* x *pragense*.** See *V.* 'Pragense'.
***V.* 'Pragense'**, syn. *V.* x *pragense*, illus. p.131.
V. rhytidophyllum illus. p.112.
***V. sargentii*.** Deciduous, bushy shrub. H and S 10ft (3m). Maplelike, mid-green foliage often changes to yellow or red in fall. Broad, flattish, lace-caplike heads of white flowers in late spring are followed by spherical, bright red fruits. Z3–7.
'Onondaga', S 6ft (2m), has bronze-red, young leaves, becoming deep green, then bronze-red again in fall. Flower buds are pink.
***V. semperflorens*.** See *V. plicatum* f. *tomentosum* 'Nanum Semperflorens'.
***V. sieboldii*.** Deciduous, rounded, dense shrub. H 12ft (4m), S 20ft (6m). Has large,

oblong to ovate, glossy, bright green leaves. Rounded heads of tubular, creamy-white flowers are borne in late spring, followed by egg-shaped, red-stalked, red fruits that ripen to black. Z5–9
V. tinus (Laurustinus). Evergreen, bushy, compact shrub. H and S 10ft (3m). Has ovate, dark green leaves. Freely borne flat heads of small, white blooms open from pink buds during late winter and spring, followed by ovoid dark blue-black fruit. Z7–9. **'Eve Price'** illus. p.143. **'French White'** is vigorous, with flattened heads of tiny white flowers opening from deep pink buds. **'Gwenllian'** freely bears flattened heads of star-shaped, pale pink flowers from deep pink buds, followed by abundant fruits.

VIGNA

PAPILIONACEAE/LEGUMINOSAE

Genus of erect and climbing or trailing annuals and evergreen perennials, grown mainly as crop plants for their leaves, pods and seeds. Frost tender. Provide full light and humus-rich, well-drained soil. Water freely when in full growth, sparingly at other times. Stems require support. Thin crowded stems or cut back hard in spring. Propagate by seed in fall or spring.
V. caracalla, syn. *Phaseolus caracalla* (Snail flower). Evergreen, perennial, fast-growing, twining climber. H 10–15ft (3–5m). Leaves comprise 3 ovate leaflets. From summer to early fall, produces pealike, purple-marked, cream flowers that turn orange-yellow. Z11–12 (min. 50–59°F/10–15°C)

Villarsia nymphoides. See *Nymphoides peltata*.

VINCA

Periwinkle

APOCYNACEAE

Genus of evergreen, trailing subshrubs and herbaceous perennials, grown for their foliage and flowers. Flowers are tubular with 5 spreading lobes. Fully to frost hardy. Useful for groundcover in shade, but flowers more freely in some sun. Grows in any soil that is not too dry. Propagate by semiripe cuttings in summer or by division from fall to spring. ⓘ All parts may cause mild stomach upset if ingested.
V. difformis. Evergreen, prostrate subshrub. H 1ft (30cm), S indefinite. Slender, trailing stems bear ovate, glossy, dark green leaves. Erect flower stems produce pale blue flowers in late fall and early winter. Z8–10
***V. herbacea* 'Hidcote Purple'.** See *V. major* var. *oxyloba*.
V. hirsuta of gardens. See *V. major* var. *oxyloba*.
V. major (Greater periwinkle, Quater). Evergreen, prostrate, arching subshrub. H 1½ft (45cm), S indefinite. Has broadly ovate, glossy, dark green leaves. Large, bright blue flowers are borne from late spring to early fall. Z7–9. **'Dartington Star'** see *V.m.* var. *oxyloba*. **var. *oxyloba*** (syn. *V.m.* 'Dartington Star', *V. herbacea* 'Hidcote Purple', *V. hirsuta* of gardens) has leaves, leaf stalks, and calyces edged with long hairs. **'Variegata'** illus. p.164.
V. minor (Lesser periwinkle) illus. p.165. **'Alba Aureovariegata'** see *V.m.* f. *alba* 'Alba Variegata'. **f. *alba* 'Alba Variegata'** (syn. *V.m.* 'Alba Aureovariegata') is an evergreen, prostrate subshrub. H 6in (15cm), S indefinite. Forms extensive mats of small, ovate, glossy, dark green leaves, edged with pale yellow, above which white flowers are borne from mid-spring to early summer, then intermittently into fall. **'Argenteovariegata'** (syn. *V.m.* 'Variegata') has leaves with creamy white margins and produces light violet-blue flowers. **'Atropurpurea'** (syn. *V.m.* 'Purpurea', *V.m.* 'Rubra') bears dark plum-purple flowers. **'Azurea Flore Pleno'** (syn. *V.m.* 'Caerulea Plena') has double, sky-blue flowers. **'Bowles' Blue'** see *V.m.* 'La Grave'. **'Caerulea Plena'** see *V.m.* 'Azurea Flore Pleno'. **'Gertrude Jekyll'** is of dense growth and bears a profusion of small, white flowers. Flowers of **'La Grave'** (syn. *V.m.* 'Bowles' Blue') are large and lavender-blue. **'Purpurea'** see *V.m.* 'Atropurpurea'. **'Ralph Shugert'** has gray-green leaves with irregular, white margins and abundant, large, mid-blue flowers. **'Rubra'** see *V.m.* 'Atropurpurea'. **'Variegata'** see *V.m.* 'Argenteovariegata'. Z3–9.
V. rosea. See *Catharanthus roseus*.

VIOLA

Violet

VIOLACEAE

Genus of annuals, biennials, evergreen, semievergreen, and deciduous perennials, and a few deciduous subshrubs, grown for their distinctive flowers. Annuals are suitable as summer bedding, perennials and subshrubs suit rock gardens, screes, and alpine houses. Fully to half hardy. Grow in sun or shade and well-drained, moisture-retentive soil, unless otherwise stated; a few species prefer acidic soil. Propagate annuals by seed sown according to flowering season, perennials and subshrubs by softwood cuttings in spring unless otherwise stated. Sow seed of species in spring or fall.
V. biflora (Twin-flowered violet). Creeping, rhizomatous perennial. H 2–6in (5–15cm), S 6in (15cm). Flat-faced, deep lemon-yellow flowers, veined dark brown, are borne singly or in pairs on upright stems in summer. Leaves are kidney-shaped and mid-green. Needs shade. May be propagated by division. Z3–8
***V.* 'Bowles' Black'** illus. p.355.
V. cornuta (Horned violet). Rhizomatous perennial. H 12–20cm (5–8in), S to 8in (20cm) or more. Has ovate, toothed leaves and flat-faced, angular, spurred, pale to deep purplish-blue, occasionally white flowers in spring and much of summer. Z6–11. **'Minor'** illus. p.356.
V. cucullata, syn. *V. obliqua*. Variable, spreading perennial with fleshy rhizomes. H 2in (5cm), S 4–6in (10–15cm). Has kidney-shaped, toothed, mid-green leaves. In late spring, produces flat-faced, blue-violet, sometimes white or pale blue flowers. Propagate in spring. Z3–8
V. elatior, syn. *V. erecta*. Upright, little-branched perennial. H 8–12in (20–30cm), S 6in (15cm). Leaves are broadly lance-shaped and toothed. Bears flat-faced, pale blue flowers, with white centers, in early summer. Prefers partial shade and moist soil. Propagate in spring by division. Z4–8
V. erecta. See *V. elatior*.
V. glabella. Clump-forming perennial with a scaly, horizontal rootstock. H 4in (10cm), S 8in (20cm). Produces flat-faced, bright yellow flowers, with purplish-veined lower petals, in late spring, above toothed, heart-shaped, bright green leaves. Needs shade. Propagate by division in spring. Z4–8
***V.* 'Haslemere'.** See *V.* 'Nellie Britton'.
V. hederacea, syn. *Erpetion reniforme, V. reniforme* (Australian violet, Ivy-leaved violet). Evergreen, creeping, mat-forming perennial. H 1–2in (2.5–5cm), S indefinite. Has tiny, rounded leaves and, in summer, bears purple or white flowers, with a squashed appearance, on short stems. Suitable for growing in an alpine house. Prefers partial shade. Propagate by division in spring. Z8–10
***V.* 'Huntercombe Purple'** illus. p.368.
***V.* 'Irish Molly'.** Evergreen, clump-forming, short-lived perennial. H 4in (10cm), S 6–8in (15–20cm). Has broadly ovate, dissected leaves and, in summer, produces a long succession of flat-faced, old-gold flowers with brown centers. Needs a position in sun. Z8–10
***V.* 'Jackanapes'** illus. p.359.
V. lutea (Mountain pansy). Mat-forming, rhizomatous perennial. H 4in (10cm), S 6in (15cm). Has small, ovate to lance-shaped leaves. Flat-faced, yellow, violet, or bicolored flowers are borne in spring and summer. Z4–8
***V.* 'Nellie Britton'**, syn. *V.* 'Haslemere', illus. p.367.
V. obliqua. See *V. cucullata*.
V. odorata (Sweet violet). Semievergreen, spreading, rhizomatous perennial. H 3in (7cm), S 6in (15cm) or more. Leaves are heart-shaped and toothed. Long stems each bear a fragrant, flat-faced, violet or white flower from late winter to early spring. Useful in a wild garden. Self seeds prolifically. May also be propagated by division. Z3–8
V. pedata (Bird's-foot violet) illus. p.355. **var. *bicolor*** is a clump-forming perennial with a thick rootstock. H 2in (5cm), S 3in (8cm). Flat-faced, velvety-purple or white flowers are borne singly on slender stems in late spring and early summer. Leaves are finely divided into 5–7 or more, narrow, toothed segments. Suits an alpine house. May be difficult to grow; needs peaty, sandy soil. Z4–8
V. reniforme. See *V. hederacea*.
***V. riviniana* Purpurea Group** illus. p.355.
V. tricolor (Heartsease, Wild pansy) illus. p.355.
V.* x *wittrockiana (Pansy). Group of slow- to moderately fast-growing, mainly bushy perennials, usually grown as annuals or biennials. H 6–8in (15–20cm), S 8in (20cm). Has ovate, often serrated, mid-green leaves. Flattish, 5-petaled flowers, 1–4in (2.5–10cm) across, in a very wide color range, are produced throughout summer or in winter–spring. H6. The following are among those available: **Clear Crystals Series** (summer-flowering) comes in a wide range of clear colors. **Joker Series** (summer-flowering) illus. p.312. **'Joker Light Blue'** (Joker Series) has pale blue flowers with deeper blue-and-white faces. **'Majestic Giants'** (summer-flowering) has large flowers in a wide color range. **Mystical Series** (winter- to spring-flowering) includes **'Banana Cream'** (Mystical Series), with yellow and creamy white flowers, **'Pineapple Crush'** (Mystical Series), with pink and yellow flowers with dark central blotches, and **'Red Wing'** (Mystical Series), with yellow and maroon-red flowers. **Sorbet Series** (winter- to spring-flowering) has small flowers, with or without whiskers, in more than 20 color combinations. **'Antique Shades'** (Sorbet Series) is compact, bearing copper-brown and purple flowers variously marked with golden yellow, orange and red. **'Fire'** (Sorbet Series) produces rich yellow and red flowers with dark central blotches. **Halloween Mixed** (Sorbet Series) produces orange or deep blackish maroon flowers. **'Sorbet Black Delight'** (Sorbet Series) illus. p.312. **Sorbet XP Series** (winter- to spring-flowering) has flowers in a wide color range, including self-colored and pansy-type, some with whiskering. **Teardrops Series** (winter- to spring-flowering) produces fragrant flowers in at least 8 colors; some are whiskered or have bold, darker central blotches.

Viscaria alpina. See *Lychnis alpina*.
Viscaria elegans. See *Silene coeli-rosa*.

VITALIANA

PRIMULACEAE

Genus of one species of evergreen, spring-flowering perennial, grown for its flowers. Often included in *Douglasia* and is useful for rock gardens, screes and alpine houses. Fully hardy. Needs sun and moist, well-drained soil. Propagate by softwood cuttings in summer or by seed in fall.
V. primuliflora, syn. *Douglasia vitaliana*, illus. p.358.

VITEX

LAMIACEAE/VERBENACEAE

Genus of evergreen or deciduous trees and shrubs, grown for their flowers. Fully to frost hardy. Cultivated species are frost hardy, but in cold areas grow against a south- or west-facing wall. Needs full sun and well-drained soil. Propagate by semiripe cuttings in summer or by seed in fall or spring.
V. agnus-castus (Chaste tree). Deciduous, spreading, aromatic shrub. H and S 8ft (2.5m). Bears upright panicles of fragrant, tubular, violet-blue flowers in early and mid-fall. Dark green leaves are divided into 5 or 7 long, narrowly lance-shaped leaflets. Z6–9. **f. *latifolia*** is more vigorous, with broader leaflets.
V. negundo. Deciduous, bushy shrub. H and S 10ft (3m). Mid-green leaves are each composed of 3–7 narrowly ovate, sharply toothed leaflets. Has loose panicles of small, tubular, violet-blue flowers from late summer through to early fall. Z6–9

VITIS
Vine
VITACEAE

Genus of deciduous, woody-stemmed, tendril climbers, grown for their foliage and fruits (grapes), which are produced in bunches. Fully hardy. Prefers fertile, well-drained, chalky soil and sun or partial shade. Produces the best fruits and fall leaf-color when planted in a warm situation. Propagate by hardwood cuttings in late fall.

V. aconitifolia. See *Ampelopsis aconitifolia*.

V. amurensis (Amur grape). Vigorous, deciduous, woody-stemmed, tendril climber. H 20ft (6m). Has dark green, 3- or 5-lobed leaves, 5–12in (12–30cm) long, that mature to red and purple in fall. Produces inconspicuous flowers through the summer, followed, in late summer and fall, by tiny, black fruits. Z4–8

***V.* 'Brant'** (illus. p.208). Deciduous, woody-stemmed, tendril climber. H to 22ft (7m) or more. Has leaves that are lobed, toothed, 4–9in (10–22cm) long and bright green. In fall, they mature to brown-red, except for the veins. Inconspicuous flowers are borne in summer, followed by green or purple fruits. Z4–8

V. coignetiae (Crimson glory vine) illus. p.209.

V. henryana. See *Parthenocissus henryana*.

V. heterophylla. See *Ampelopsis brevipedunculata* var. *maximowiczii*.

V. quinquefolia. See *Parthenocissus quinquefolia*.

V. striata. See *Cissus striata*.

V. thomsonii. See *Cayratia thomsonii*.

V. vinifera (Grape vine). **'Purpurea'** illus. p.210. **'Spetchley Red'** is a woody climber. H 22ft (7m). Has rounded, 3- to 5-lobed, toothed, mid-green leaves, turning crimson-red in fall. Produces small, unpalatable, spherical purple grapes in fall. Z6–10

VRIESEA
BROMELIACEAE

Genus of evergreen, rosette-forming, mostly epiphytic perennials, grown for their flowers and overall appearance. Frost tender. Needs a position in partial shade and a rooting medium of equal parts humus-rich soil and either sphagnum moss, bark, or plastic chips used for orchid culture. Using soft water, water moderately when in growth, sparingly at other times, and from mid-spring to mid-fall keep rosette centers filled with water. Propagate plants by offsets or seed in spring. See also feature panel p.471.

V. fenestralis. Evergreen, epiphytic perennial with dense, funnel-shaped rosettes. H and S 12–16in (30–40cm). Pale green leaves, with dark lines and cross-bands, are very broadly strap-shaped and arching or rolled under at tips. In summer, flat racemes of tubular, yellowish-green flowers, with green bracts, are borne above the foliage. Z12 (min. 59°F/15°C)

V. fosteriana. Evergreen, epiphytic perennial with dense, funnel-shaped rosettes. H and S 2ft (60cm) or more. Broadly strap-shaped, arching, yellowish- to deep green leaves, are cross-banded with reddish-brown, particularly beneath. In summer–fall, flat spikes of tubular, pale yellow or greenish-yellow flowers, with brownish-red tips, are produced well above the foliage. Z12 (min. 59°F/15°C)

V. hieroglyphica (King of the bromeliads). Evergreen perennial with dense, funnel-shaped rosettes. H and S 2–3ft (60cm–1m). Produces broadly strap-shaped, arching, yellowish-green leaves, cross-banded and checkered with dark brownish-green. In summer, bears panicles of tubular, yellow flowers well above the leaves. Z12 (min. 59°F/15°C)

V. platynema. Evergreen, basal-rosetted, epiphytic perennial. H and S 2ft (60cm). Broadly strap-shaped, mid- to light green leaves, with purple tips, form dense rosettes. In summer, produces flat racemes of tubular, green-and-yellow flowers, with red or yellow bracts. Z12 (min. 59°F/15°C)

V. psittacina. Evergreen, spreading, basal-rosetted, epiphytic perennial. H and S 16–24in (40–60cm). Has dense rosettes of strap-shaped, arching, pale green leaves. Flat spikes of tubular, yellow flowers with green tips, emerging from red-and-yellow or red-and-green bracts, are borne in summer–fall. Z12 (min. 59°F/15°C)

V. splendens (Flaming sword; illus. p.471). Evergreen, basal-rosetted, epiphytic perennial. H and S 1ft (30cm). Has dense rosettes of strap-shaped, arching, olive-green leaves, with purple to reddish-brown cross-bands. In summer and fall, bears flat, sword-shaped racemes of tubular, yellow flowers, between bright red bracts. Z12 (min. 59°F/15°C)

x ***Vuylstekeara* Cambria gx 'Lensing's Favorite'.** See x *Oncidopsis* Cambria gx 'Lensing's Favorite'.

WACHENDORFIA
HAEMODORACEAE

Genus of summer-flowering, deciduous or evergreen, tuberous perennials, grown for their large, terminal panicles of star-shaped, yellow flowers. Half hardy. Requires a position in full sun and in moist soil. Propagate by division in spring or by seed in fall or spring.

W. thyrsiflora. Clump-forming perennial. H 5–6ft (1.5–2m), S 1½ft (45cm). Shallowly cup-shaped, yellow to orange flowers are borne in dense panicles in early summer. Mid-green leaves are narrowly sword-shaped, pleated, and rather coarse. Z10–11

WAHLENBERGIA
CAMPANULACEAE

Genus of mat-forming to upright annuals and perennials, grown for their bell-shaped flowers. Borderline fully hardy to half hardy. Needs a sheltered site, partial shade, and well-drained, peaty, sandy soil. Useful for an alpine house. Propagate by seed in fall.

W. albomarginata (New Zealand bluebell). Basal-rosetted, rhizomatous perennial. H and S 6in (15cm) or more. In summer, slender stems bear a bell-shaped, clear blue flower that opens flat. Has tufts of narrowly elliptic to ovate, mid-green leaves. Suits a rock garden. (borderline)

W. congesta, syn. *W. saxicola* var. *congesta*. Mat-forming, creeping, rhizomatous perennial. H 3in (7cm), S 4in (10cm). Has small, rounded or spoon-shaped, mid-green leaves and, in summer, bell-shaped, lavender-blue or white flowers held singly on wiry stems. Z9–11

W. pumilo. See *Edraianthus pumilo*.

W. saxicola* var. *congesta. See *W. congesta*.

W. serpyllifolia. See *Edraianthus serpyllifolius*.

WALDSTEINIA
ROSACEAE

Genus of rhizomatous, herbaceous perennials, grown for their foliage and flowers. Provides good groundcover. Fully hardy. Needs sun and well-drained soil. Propagate by division in early spring.

W. ternata, syn. *W. trifolia*, illus. p.372.

W. trifolia. See *W. ternata*.

WASHINGTONIA
ARECACEAE/PALMAE

Genus of evergreen, single-stemmed palms, grown for their stately appearance. Frost tender. Grow in fertile, well-drained soil and in full sun. Water containerized specimens freely in summer, moderately at other times. Remove skirt of persistent, dead leaves regularly as they are a fire risk. Propagate by seed in spring at not less than 75°F (24°C). Red spider mite may be a nuisance.

W. filifera (Desert fan palm). Fast-growing, evergreen palm. H and S to 80ft (25m). Has fan-shaped, long-stalked, gray-green leaves, each lobe with a filamentous tip. Long-stalked clusters of tiny, creamy-white flowers are borne in summer and berrylike, black fruits in winter. Z10–12 (min. 46–50°F/8–10°C)

W. robusta (Thread palm) illus. p.451.

WATSONIA
IRIDACEAE

Genus of cormous perennials, *Gladiolus*-like in overall appearance, although flowers are more tubular. Frost hardy to half hardy. Needs an open, sunny position and light, well-drained soil. In fall, plant 4–6in (10–15cm) deep; protect with bracken, loose peat, or similar during first winter, if frost is expected. Feed with slow-acting fertilizer, such as bonemeal, in summer. Leave corms undisturbed to form clumps. Propagate by seed in fall.

W. beatricis. See *W. pillansii*.

W. borbonica, syn. *W. pyramidata*, illus. p.386.

W. fourcadei. Clump-forming, summer-flowering corm. H to 5ft (1.5m), S 1–1½ft (30–45cm). Sword-shaped, erect leaves are mostly basal. Bears a dense spike of tubular, salmon-red flowers, each 3–3½in (8–9cm) long and with 6 lobes. Z9–11

W. meriania illus. p.385.

W. pillansii, syn. *W. beatricis*, illus. p.386.

W. pyramidata. See *W. borbonica*.

Wattakaka sinensis. See *Dregea sinensis*.

WEIGELA
CAPRIFOLIACEAE/DIERVILLACEAE

Genus of deciduous shrubs, grown for their showy, bell- to funnel-shaped flowers. Good for a mixed or shrub border, or for open woodland. Fully hardy. Prefers sunny, fertile soil. To maintain vigor, prune out a few older branches to ground level, after flowering each year. Straggly, old plants may be pruned hard in spring (although this will lose one season's flowers). Propagate by softwood cuttings in summer.

***W.* 'Bristol Ruby'.** Vigorous, upright shrub. H 8ft (2.5m), S 6ft (2m). Deep red flowers open from darker buds amid ovate, toothed, mid-green leaves in late spring and early summer. Z4–8

***W.* 'Candida'.** Bushy shrub. H and S 8ft (2.5m). Pure white flowers are borne in late spring and early summer. Leaves are ovate, toothed, and bright green. Z4–8

***W.* Carnaval ('Courtalor').** Vigorous, upright shrub. H 8ft (2.5m), S 6ft (2m). Has ovate, dark green leaves. In late spring and early summer, bears bell-shaped, pale pink, white, and dark pink flowers. Z4–8

W. coraeensis. Upright to spreading shrub. H and S 11½ft (3.5m). Has shiny, ovate, toothed leaves. In early summer, bears bell-shaped, white or pale pink flowers, aging to carmine-red. Z4–8

W. florida. Deciduous, arching shrub. H and S 8ft (2.5m). Bears deep pink flowers, pale pink to white inside, in late spring and early summer. Ovate, toothed leaves are mid-green. Z4–8. **'Alexandra'** see *W.f.* Wine and Roses ('Alexandra').

'Variegata' see *W.* 'Nana Variegata'

Wine and Roses ('Alexandra') (syn. *W.f.* 'Alexandra'), H 4–5½ft (1.2–1.6m), S 5½–6ft (1.6–1.8m), has dark red-brown leaves and produces abundant, bright purplish pink flowers.

***W.* 'Looymansii Aurea'** illus. p.154.

W. middendorffiana illus. p.159.

***W.* 'Nana Variegata'**, syn. *W. florida* 'Variegata', illus. p.152.

***W. praecox* 'Variegata'.** See *W.* 'Praecox Variegata'.

***W.* 'Praecox Variegata'**, syn. *W. praecox* 'Variegata', *W.* 'Variegata'. Upright shrub. H 8ft (2.5m), S 6ft (2m). Produces ovate, toothed, bright green leaves with broad creamy-white margins. Bears fragrant, pink flowers, marked inside with yellow, in late spring. Z4–8

***W.* 'Red Prince'.** Upright, rounded shrub. H and S 5½ft (1.6m). Has reddish brown branches and large, narrowly ovate leaves, with purplish red tints. In late spring, produces bell-shaped, lightly fragrant, dark red flowers. Z4–8

***W.* 'Variegata'.** See *W.* 'Praecox Variegata'.

Weingartia neocumingii. See *Rebutia neocumingii*.

WELDENIA
COMMELINACEAE

Genus of one species of summer-flowering, tuberous perennial, grown for its cup-shaped, white flowers. Frost hardy. Needs sun and gritty, well-drained soil. Keep dry from fall until growth

restarts in late winter. Suitable for alpine houses. Propagate by root cuttings in winter or by division in early spring.
W. candida illus. p.348.

WELWITSCHIA

WELWITSCHIACEAE

Genus of one species of evergreen, desert-growing perennial with a deep tap root. Has only 2 leaves, which lie on the ground and grow continuously from the base for up to 100 years. Frost tender. Needs sun and sharply drained soil. Requires desert conditions: may succeed in a mixture of stone chippings and leaf mold, in a piece of drainpipe to take its long tap root. Propagate by seed when ripe.
W. bainesii. See *W. mirabilis*.
W. mirabilis, syn. *W. bainesii*. Evergreen perennial with a short, woody trunk. H to 1ft (30cm), S indefinite. Has 2 strap-shaped leaves, to 8ft (2.5m) long, with tips splitting to form many tendrillike strips. Bears small, reddish-brown cones. Z12 (min. 66°F/19°C)

WESTRINGIA

LAMIACEAE/LABIATAE

Genus of evergreen shrubs, grown for their flowers and overall appearance. Good for a border, or as a hedge or screen, in mild regions. Frost tender. Requires full light and well-drained soil. Water potted specimens moderately, less when not in full growth. Propagate by seed in spring or by semiripe cuttings in late summer.
W. fruticosa, syn. *W. rosmariniformis* (Australian rosemary), illus. p.453.
W. rosmariniformis. See *W. fruticosa*.

Wigginsia. See *Parodia*.
Wilcoxia albiflora. See *Echinocereus leucanthus*.
Wilcoxia schmollii. See *Echinocereus schmollii*.
x ***Wilsonara* Hambühren Stern gx 'Cheam'.** See *Oncidium* Hambühren Stern gx 'Cheam'.
Wintera aromatica. See *Drimys winteri*.

WISTERIA

PAPILIONACEAE/LEGUMINOSAE

Genus of deciduous, woody-stemmed, twining climbers, grown for their spectacular, fragrant, pealike flowers. Flowers are followed by beanlike, pendant, green, seed pods. Suitable for walls, pergolas, and growing against buildings and trees. Fully hardy. Needs a position in sun and in fertile, well-drained soil. Prune after flowering and again in late winter. Propagate by bench grafting in winter or by seed in fall or spring. Plants grown from seed may not flower for some years and often have poor flowers. ⓘ All parts may cause severe discomfort if ingested. See also feature panel p.205.
W. brachybotrys (Silky wisteria). Deciduous, woody-stemmed, twining climber. H to 28ft (9m) or more. Leaves are 8–14in (20–35cm) long, each with 9–13 ovate leaflets. Produces 4–6in (10–15cm) long racemes of scented, pealike, violet to white flowers, with yellow-marked upper petals, in mid- to late spring, followed by velvety green seed pods. Z5–9. **'Alba'** see *W.b.* f. *albiflora* 'Shiro-kapitan'.
f. *albiflora* 'Shiro-kapitan' (syn. *W.b.* 'Alba', *W.b.* 'Shiro-kapitan', *W.b.* 'White Silk', *W. venusta, W.v.* 'Alba'; illus. p.205) produces very fragrant, occasionally double, white flowers, with a yellow stain at the base of each standard.
'Murasaki-kapitan' see *W.* x *valderi* 'Murasaki-kapitan'. **'Okayama'** has violet-blue flower buds, opening paler; highly scented. **'Shiro-kapitan'** see *W.b.* f. *albiflora* 'Shiro-kapitan'.
'Showa-beni' has lilac-pink flowers with a greenish yellow mark on each standard.
'White Silk' see *W.b.* f. *albiflora* 'Shiro-kapitan'.
W. chinensis. See *W. sinensis*.
W. floribunda (Japanese wisteria). Vigorous twining climber. H 28ft (9m) or more. Pinnate leaves comprise 11–19 ovate to lance-shaped leaflets. In early summer, pealike, fragrant, blue to violet, pink, or white flowers, the standards marked with white and yellow, are borne in pendent racemes, to 1ft (30cm) or more long, the flowers opening gradually from the bases to the tips; they are often followed by beanlike, velvety green seed pods, to 6in (15cm) long. Z5–9. **'Alba'** see *W.f.* f. *alba* 'Shiro-noda'. **f. *alba* 'Shiro-noda'** (syn. *W.f.* 'Alba', *W.f.* 'Shiro-noda'; illus. p.196) bears white flowers in racemes 2ft (60cm) long. **'Black Dragon'** see *W.f.* 'Kokuryu'. **'Domino'** produces blue-violet flowers with light purple-blue standards, marked yellow at the base, and darker purple-blue wing and keel petals, in spring and sometimes again in fall. **'Double Black Dragon'** see *W.f.* f. *pleniflora* 'Yae-kokuryu'.
'Hon-beni' see *W.f.* f. *rosea* 'Honi-beni'.
'Kokuryu' (syn. *W.f.* 'Black Dragon') is early- and free-flowering, bearing racemes, 1–1½ft (30–45cm) long, of about 100 scented, dark purplish-violet flowers, each with a pale yellowish-white blotch on the standard petal. **'Lawrence'** has densely packed racemes of pale violet-blue flowers, with greenish-yellow bases on the standards, and darker blue-violet keel and wing petals, borne in spring.
'Macrobotrys' see *W.f.* f. *multijuga* 'yushaku'. **'Multijuga'** see *W.f.* f. *multijuga* 'yushaku'. **f. *multijuga* 'yushaku'** (syn. *W.f.* 'Macrobotrys', *W.f.* 'Multijuga') bears lilac-blue flowers in racemes 3–4ft (90–120cm) long.
f. *pleniflora* 'Yae-kokuryu' (syn. *W.f.* 'Double Black Dragon', *W.f.* 'Violacea Plena', *W.f.* 'Yae-kokuryu'; illus. p.205) bears racemes 14in (35cm) long, of slightly ragged, fully double, lilac-purple flowers with dark purple-indigo centers.
'Rosea' see *W.f.* f. *rosea* 'Honi-beni'.
f. *rosea* 'Honi-beni' (syn. *W.f.* 'Honi-beni', *W.f.* 'Rosea'; illus. p.205) has racemes 12–16in (30–40cm) long of dark purplish-pink flowers with a yellow mark on the standard bases. **'Shiro-noda'** see *W.f.* f. *alba* 'Shiro-noda. **'Violacea Plena'** see *W.f.* f. *pleniflora* 'Yae-kokuryu'.
'Yae-kokuryu' see *W.f.* f. *pleniflora* 'Yae-kokuryu'.
W.* x *formosa. Vigorous twining climber with pinnate leaves comprising 9–15, broadly ovate to elliptic leaflets. H 28ft (9m) or more. Produces pealike, fragrant, violet-blue flowers, with white and yellow markings, in pendent racemes, to 10in (25cm) long, in late spring and early summer, often followed by beanlike, velvety green seed pods, to 15cm (6in) long. Z5–9
W. frutescens (American wisteria; illus p.205). Deciduous, woody-stemmed, twining climber. H 25–30ft (8–10m). Pinnate leaves comprise 9–15 bright green, oblong to lance-shaped leaflets. In early summer, produces fragrant, lilac to pale purple, pealike flowers in pendant clusters. Beanlike, olive-green seed pods, 3–4in (8–10cm) long, form in late summer and persist into winter. Z5–9. **var. *frutescens* 'Amethyst Falls'** (illus. p.205) bears flowers with a bluish tint. **var. *frutescens* 'Longwood Purple'** (illus. p.205) produces deeper purple blooms.
W. sinensis, syn. *W. chinensis* (Chinese wisteria). Vigorous, deciduous, woody-stemmed, twining climber. H to 100ft (30m). Has leaves comprising 11 elliptic or ovate leaflets. Produces fragrant, lilac or pale violet flowers, in racemes 8–12in (20–30cm) long, in early summer, followed by velvety seed pods. Z5–9. **'Alba'** see *W.s.* f. *alba* 'Jako'. **f. *alba* 'Jako'** (syn. *W.s.* 'Alba') has strongly scented, pealike, white flowers in racemes 8–12in (25–30cm) long.
'Amethyst' has deep bronze young foliage and bears very fragrant, deep purplish-blue flowers with paler standards. **'Prolific'** (illus. p.205), H to 100ft (30m), is vigorous, producing abundant, single, lilac-blue to pale violet-blue flowers in longer racemes.
***W.* x *valderi* 'Burford'.** Vigorous, twining, hybrid climber. H 12-25ft (4–8m). In late spring to early summer, bears abundant, dense racemes, to 1½ft (45cm) long, of fragrant, pale violet flowers, with a pale, yellow-white blotch on the standard petal, and darker blue-violet wings and keel. Z5–9. **'Murasaki-kapitan'** (syn. *W. brachybotrys* 'Murasaki-kapitan', *W. venusta* 'Violacea') has deep blue-violet flowers with prominent white, slightly yellow-tinged markings on the standards.
W. venusta. See *W. brachybotrys* f. *albiflora* 'Shiro-kapitan'. **'Alba'** see *W. brachybotrys* f. *albiflora* 'Shiro-kapitan'. **'Violacea'** see *W.* x *valderi* 'Murasaki-kapitan'.

WOLFFIA

Duckweed

ARACEAE

Genus of semievergreen, perennial, floating water plants, grown for their curiosity value as the smallest-known flowering plants. Frost hardy to frost tender. Needs a sunny position. Ideal for cold-water aquariums; in warmer climates can be grown in an outdoor pool. Remove excess plantlets as required. Propagate by redistribution of plantlets.
W. arrhiza (Least duckweed). Semievergreen, perennial, floating water plant. S indefinite. Rootless, rounded, bright green fronds are 1/16 in (1mm) across. Insignificant, green-tinged, white flowers are produced in summer. Z10–11

WOLLEMIA

Wollemi pine

ARAUCARIACEAE

Genus of one species of evergreen conifer with narrowly oblong, pointed, needlelike, dark green leaves set opposite each other along shoot. See also CONIFERS.
W. nobilis (Wollemi pine) illus. p.96.

WOODSIA

WOODSIACEAE

Genus of deciduous ferns, suitable for rock gardens and alpine houses. Fully to frost hardy. Tolerates sun or partial shade. May be difficult to cultivate: soil must provide constant moisture and also be quick-draining, and crowns of plants must sit above soil to avoid rotting. Propagate by division in early spring.
W. obtusa. Deciduous, tufted, terrestrial or rock-dwelling fern. H 6–12in (15–30cm), S 8in (20cm). In early spring, produces lance-shaped to ovate, pale green fronds, to 1ft (30cm) long; each is composed of 8–15 pairs of elliptic to ovate pinnae, with blunt-tipped segments, covered in somewhat sticky hairs. Z4–8
W. polystichoides (Holly-fern woodsia). Deciduous, tufted fern. H 4–12in (10–30cm), S 8–16in (20–40cm). In early spring, has lance-shaped, divided, pale green fronds, to 14in (35cm) long, softly hairy on both surfaces and scaly beneath; each is composed of 15–30 pairs of narrowly sickle-shaped or oblong pinnae, with slightly toothed margins. May be damaged by late frosts. Z4–8

WOODWARDIA

BLECHNACEAE

Genus of evergreen or deciduous ferns, ideal for clothing a moist, shady bank, especially near water. Fully to frost hardy. Prefers partial shade and fibrous, moist, peaty soil. Remove faded fronds regularly. Propagate by division in spring.
W. fimbriata (Giant chain fern). Evergreen fern. H 3–6ft (1–2m), S 5ft (1.5m). Produces lance-shaped or elliptic, pinnate, mid-green fronds, up to 8ft (2.5m) long. Z9–11
W. unigemmata (Asian chain fern). Evergreen fern. H 3ft (1m), S 10ft (3m). Has arching, broadly lance-shaped, pinnate, dark green fronds, to 6ft (2m) long. New foliage emerges brilliant red and fades to brown and then green. (borderline) Z7–10

WULFENIA

PLANTAGINACEAE/SCROPHULARIACEAE

Genus of evergreen, rosette-forming perennials, grown mainly for their spikelike racemes of tubular, 2-lipped flowers. Fully hardy. Suitable for an alpine house. Needs full sun and well-drained soil. Propagate by division in spring or by seed in fall.
W. amherstiana illus. p.341.
W. carinthiaca. Evergreen perennial. H and S 10in (25cm). Produces rosettes of oblong to ovate, toothed, dark green leaves, hairy beneath. In summer, bears dense, one-sided racemes of small, tubular, violet-blue flowers on erect stems. Z5–8

XYZ

XANTHOCERAS

SAPINDACEAE

Genus of one species of erect, deciduous, spring- to summer-flowering shrub, grown for its foliage and flowers. Fully hardy. Requires a sunny position and fertile, well-drained soil. Does best in areas with hot summers. Propagate by seed sown in fall or by root cuttings or suckers in late winter. Prone to coral spot fungus.
X. sorbifolium illus. p.112.

XANTHOCYPARIS

CUPRESSACEAE

Genus of conifers with flattened sprays of scalelike adult leaves and larger, linear, young leaves in whorls of four. Fully hardy. Cones are small and spherical. Cultivars of *X. nootkatensis* are striking specimen trees. ⓘ Contact with foliage may aggravate skin allergies. See also CONIFERS.
X. nootkatensis, syn. *Chamaecyparis nootkatensis* (Nootka cypress). Almost geometrically conical conifer. H 50ft (15m), S 20ft (6m). Bears long, pendent sprays of scalelike, aromatic, gray-green leaves and globular, hooked, dark blue and green cones that ripen to brown. Z4–7.
'Pendula' has a gaunt crown of arching, weeping foliage.

Xanthophthalmum. See *Glebionis*.

XANTHORRHOEA

Blackboy, Grass tree

XANTHORRHOEACEAE

Genus of evergreen, long-lived perennials, grown mainly as foliage plants. Frost tender. Needs full sun, well-drained soil and a fairly dry atmosphere. Propagate by basal offsets or seed in spring.
X. australis. Evergreen perennial with a stout, dark trunk. H 2–4ft (60cm–1.2m), S 4–5ft (1.2–1.5m). Very narrow, arching, flattened, silvery-green leaves, 2ft (60cm) or more long, 1/16in (2mm) wide, spread from top of the trunk. In summer, may produce small, fragrant, 6-petaled, white flowers, in dense, candlelike spikes, 2ft (60cm) or more long, on stems of similar length. Z10–11 (min. 41°F/5°C)

XANTHOSOMA

ARACEAE

Genus of perennials, with underground tubers or thick stems above ground, grown mainly for their attractive foliage. Many species are cultivated in the tropics for their edible tubers. Frost tender. Needs a position in partial shade and rich, moist soil. Keep in a contantly moist atmosphere. Propagate by division; alternatively, take stem cuttings in spring or summer.
X. nigrum. See *X. violaceum*.
X. sagittifolium illus. p.474.
X. violaceum, syn. *X. nigrum*. Stemless perennial with large, underground tubers and leaves rising from ground level. H and S 4ft (1.2m). Purplish leaf stalks, to over 2ft (60cm) long, bear arrow-shaped leaf blades, 28in (70cm) long, dark green with purple midribs and veins. Intermittently bears greenish-purple spathes, yellower within, surrounding a brownish spadix. Z11–12 (min. 55°F/13°C)

XERANTHEMUM

Immortelle

ASTERACEAE/COMPOSITAE

Genus of summer-flowering annuals. Half hardy. Grow in sun and in fertile, very well-drained soil. Propagate by seed sown outdoors in spring.
X. annuum [double] illus. p.305.

XEROCHRYSUM

SYN. BRACHTEANTHA

ASTERACEAE/COMPOSITAE

Genus of herbaceous perennials and annuals, grown for their daisylike flower heads with papery bracts. Stalkless, hairy leaves are borne on erect, branching stems. Frost to half hardy. Needs full sun and moderately fertile, moist but well-drained soil. Propagate by seed sown in spring. *X. bracteatum* is often grown for cutting and drying.
X. bracteatum (Everlasting flower, Immortelle, Strawflower). Moderately fast-growing, upright, branching annual or short-lived perennial. H 4–36in (10–100cm), S 1ft (30cm). Has broadly lance-shaped, mid-green leaves and papery, daisylike flower heads in bright white, yellow, pink, or red from late spring to fall. Flower heads dry well. Z10–11. **Bright Bikini Series**, H and S 1ft (30cm), has double flower heads, to 3in (8cm) across, in red, pink, orange, yellow, or white.
Monstrosum Series cultivars, H 3ft (90cm), have fully double flower heads.
Sundaze Series SUNDAZE GOLD ('Redbragol') illus. p.320.

XEROPHYLLUM

MELANTHIACEAE/LILIACEAE

Genus of elegant, summer-flowering, rhizomatous, clump-forming perennials. Fully hardy. Prefers full sun and moist, peaty soil. May be difficult to cultivate. Propagate by seed in fall.
X. tenax. Clump-forming perennial. H 3–4ft (1–1.2m), S 1–2ft (30–60cm). Star-shaped, white flowers, with violet anthers, are borne in dense, terminal racemes in summer. Basal leaves are mid-green. Z4–8

YUCCA

SYN. HESPEROYUCCA

ASPARAGACEAE

Genus of evergreen shrubs and trees, grown for the architectural value of their bold, sword-shaped, clustered leaves and showy panicles of usually white flowers. Good for growing in containers. Fully hardy to frost tender. Needs full sun and well-drained soil. Water containerized specimens moderately; reduce watering when not in full growth. Regularly remove spent flowering stems. Propagate in spring: frost-tender species by seed or suckers, hardier species by root cuttings or division.
Y. aloifolia (Spanish bayonet). Slow-growing, evergreen shrub or small tree with few branches. H 25ft (8m), S 12–15ft (4–5m). Has sword-shaped, deep green leaves, 20–30in (50–75cm) long, and large panicles of purple-tinted, white flowers in summer–fall. Z9–11
Y. filamentosa (Adam's needle). Clump-forming, evergreen, basal-rosetted shrub. H 6ft (2m), S 5ft (1.5m). From mid- to late summer, produces tall panicles of pendulous, tulip-shaped, white flowers, which rise up through low-growing tufts of sword-shaped, deep green leaves, edged with white threads. Z5–10. **'Bright Edge'** has leaves with broad yellow margins. Z5–10. **'Color Guard'** has cream-colored leaves with green margins.
***Y. filifera* 'Ivory'.** See *Y. flaccida* 'Ivory'.
Y. flaccida. Clump-forming, almost stemless shrub. H 22in (55cm), S 5ft (1.5m). Has basal rosettes of lance-shaped, dark blue-green leaves, to 22in (55cm) long, fringed with curly or straight threads. Bears nodding, bell-shaped white flowers in mid- and late summer. Z6–10. **'Golden Sword'** has yellow-margined leaves. Z5–10. **'Ivory'** (syn. *Y. filifera* 'Ivory') illus. p.151.
Y. gloriosa (Spanish dagger) illus. p.132. **'Variegata'** has yellow-margined leaves.
Y. parviflora. See *Hesperaloe parviflora*.
Y. whipplei. See *Hesperoyucca whipplei*.

YUSHANIA

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.
Y. anceps, syn. *Arundinaria anceps, A. jaunsarensis, Sinarundinaria jaunsarensis* (Anceps bamboo). Evergreen, spreading bamboo. H 6–10ft (2–3m), S indefinite. Erect, later arching, stems bearing several branches at each node. Z8–11. **'Pitt White'** illus. p.288.

ZABELIA

CAPRIFOLIACEAE

Genus of deciduous shrubs, grown for their foliage and freely borne flowers. Fully to half hardy, but in cold areas does best against a south- or west-facing wall. Requires a sheltered, sunny site and fertile, well-drained soil. Remove dead wood in late spring and prune out older branches after flowering to restrict growth, if needed. Propagate by softwood cuttings in summer.
Zabelia triflora, syn. *Abelia triflora*, illus. p.113.

ZALUZIANSKYA

SCROPHULARIACEAE

Genus of sticky, low-growing annuals and evergreen perennials and subshrubs, with spikes of fragrant, tubular flowers with spreading petals. Frost hardy to half hardy. Needs full sun and moist, sharply drained, humus-rich soil. Propagate by stem-tip cuttings in summer.
Z. ovata. Clump-forming, evergreen perennial. H to 10in (25cm), S to 2ft (60cm). Branching, brittle stems bear ovate, toothed, sticky, gray-green leaves. Crimson-backed, white flowers are borne over a long period in summer. Z7–10

ZANTEDESCHIA

Arum lily

ARACEAE

Genus of summer-flowering, tuberous or rhizomatous perennials, usually remaining evergreen in a warm climate, grown for their erect, funnel-shaped spathes and club-shaped spadix. Fully hardy to frost tender. Requires full sun or partial shade and well-drained soil. *Z. aethiopica* will also grow in 6–12in (15–30cm) of water and therefore is suitable as a marginal water plant. Propagate by offsets in winter. ⓘ All parts of the plant may cause mild stomach upset if ingested, and contact with the sap may irritate the skin.
Z. aethiopica (Arum lily). Clump-forming, rhizomatous perennial, evergreen in mild areas. H and S 3ft (90cm). Has semierect, arrow-shaped, glossy, bright green leaves, to 1½ft (45cm) long. In late spring to midsummer, bears a succession of large, pure white spathes, to 10in (25cm) long, with creamy yellow spadices. Z8–10.
'Crowborough' illus. p.437.
'Green Goddess' illus. p.408.
Z. albomaculata, syn. *Z. melanoleuca*. Summer-flowering, tuberous perennial. H 12–16in (30–40cm), S 1ft (30cm). Has arrow-shaped, semierect, basal leaves with transparent spots. Produces a yellow spadix inside a white to cream, pale yellow or pale pink spathe, 5–8in (12–20cm) long, shading to green at the base and with a purple blotch inside. Z10–12 (min. 41°F/5°C)
***Z.* 'Black-eyed Beauty'.** Summer-flowering, tuberous perennial. H 12–16in (30–40cm), S 6in (15cm). Broadly heart-shaped, semierect, mid- to dark green, basal leaves are heavily spotted white. Each flower stem has a yellow spadix and cream spathe, 6in (15cm) long, with a central black mark in the throat. Z10–12 (min. 41°F/5°C)
***Z.* 'Black Magic'.** Summer-flowering, tuberous perennial. H 30in (75cm), S 8in (20cm). Broadly heart-shaped, semierect, mid- to dark green, basal leaves are heavily mottled white. Each flower stem bears a golden-yellow spadix, surrounded by a black-throated, yellow spathe, 6in (15cm) long. Z10–12 (min. 41°F/5°C)
***Z.* 'Cameo'** illus. p.395.
Z. elliottiana (Golden arum lily) illus. p.393.
***Z.* 'Garnet Glow'.** Summer-flowering, tuberous perennial. H 2ft (60cm), S 8in (20cm). Produces white-spotted leaves and light red spathes. Z10–12 (min. 41°F/5°C)
***Z.* 'Kiwi Blush'.** Clump-forming, tuberous perennial. H 2–3ft (60–90cm), S 2ft (60cm). Has heart-shaped, mid-green leaves. From mid-spring to late summer, produces thick-textured, white spathes, with pale pink throats maturing to darker pink. Z8–10
Z. melanoleuca. See *Z. albomaculata*.
***Z.* 'Picasso'.** Summer-flowering, tuberous perennial. H 30in (75cm), S 1½ft (45cm). Has arrow-shaped, white-spotted leaves. Produces purple spathes with white edges. Z10–12 (min. 41°F/5°C)
Z. rehmannii (Pink arum). Summer-flowering, tuberous perennial. H 16in (40cm), S 1ft (30cm). Green basal leaves are arrow-shaped and semierect.

Each flower stem has a yellow spadix, surrounded by a reddish-pink spathe, 7–3in (8cm) long. Z10–12 (min. 41°F/5°C)

ZANTHOXYLUM

RUTACEAE

Genus of deciduous or evergreen, spiny shrubs and trees, grown for their aromatic foliage, fruits, and habit. Fully hardy to frost tender. Needs sun or partial shade and fertile soil. Propagate by seed in fall or by root cuttings in late winter.

Z. piperitum (Japan pepper). Deciduous, bushy, spiny shrub or small tree. H and S 8ft (2.5m). Has aromatic, glossy, dark green leaves composed of many leaflets. Small, red fruits follow tiny, greenish-yellow, spring flowers. Z3–7

Z. simulans illus. p.141.

ZAUSCHNERIA

ONAGRACEAE

Genus of subshrubby, evergreen or deciduous perennials, grown for their profusion of flowers. Borderline fully hardy to frost hardy. Requires sun and well-drained soil. Propagate by seed or division in spring, or by side-shoot cuttings in summer.

Z. californica, syn. *Epilobium californicum*. Clump-forming, woody-based, evergreen or semievergreen perennial. H and S 1½ft (45cm). Terminal clusters of tubular, bright scarlet flowers, on slender stems, are borne in late summer and early fall. Has lance-shaped, rich green leaves. (borderline) Z5–9.

subsp. *cana* (syn. *Epilobium canum*, *Z. cana*), H 1ft (30cm), is deciduous and produces linear, gray leaves and fuchsialike, brilliant scarlet flowers.

subsp. *cana* 'Dublin' see *Z.c* 'Dublin'.

'Dublin' (syn. *Z.c.* 'Glasnevin', *Z.c.* subsp. *cana* 'Dublin') illus. p.340.

'Glasnevin' see *Z.c.* 'Dublin'.

***Z. cana*.** See *Z. californica* subsp. *cana*.

Z. septentrionalis, syn. *Epilobium septentrionale*. Mat-forming, non-woody, deciduous perennial. H 4–8in (10–20cm), S to 8in (20cm). Terminal clusters of numerous, short-stalked, tubular, scarlet flowers are produced in late summer. Has ovate to lance-shaped, gray to gray-green leaves. Z7–11

ZEA

Indian corn, Maize

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.

Z. mays (Ornamental maize, Sweet corn). Fairly fast-growing, upright annual with lance-shaped leaves. H to 12ft (4m), S 2ft (60cm). Z10–11. **'Gracillima Variegata'**, H 3ft (90cm), S 1–1½ft (30–45cm), has leaves striped green and creamy. Tassellike, silvery flower heads are followed by large, bright yellow seed heads (cobs).

'Harlequin', H 3–6ft (1–2m), S 2ft (60cm), has leaves 2ft (60cm) long, striped with green, red, and white. Feathery, silky flower heads, 6in (15cm) long, on long stems, are borne in midsummer, followed by large, cylindrical, green-sheathed, yellow seed heads (cobs), with deep red grains.

'Strawberry Corn', H 4ft (1.2m), has seed heads with small, yellow to burgundy-red grains within yellow-green spathe-bracts.

***Zebrina pendula*.** See *Tradescantia zebrina*.

ZELKOVA

ULMACEAE

Genus of deciduous trees, grown mainly for their foliage and habit. Best planted as single specimens. Has insignificant flowers in spring. Fully hardy, but prefers some shelter. Does best in full sun and requires deep, fertile, moist but well-drained soil. Propagate by seed in fall.

Z. abelicea, syn. *Z. cretica*. Deciduous, bushy-headed, spreading tree. H 15ft (5m), S 22ft (7m). Bears small, ovate, dark green leaves that are prominently toothed. Z5–8

Z. carpinifolia (Caucasian elm) illus. p.64.

***Z. cretica*.** See *Z. abelicea*.

Z. serrata illus. p.67.

ZENOBIA

ERICACEAE

Genus of one species of deciduous or semievergreen, summer-flowering shrub, grown for its flowers. Fully hardy. Needs partial shade and moist, peaty, acidic soil. Prune out older, weaker shoots after flowering to maintain vigor. Propagate by semiripe cuttings in summer.

Z. pulverulenta illus. p.130.

ZEPHYRANTHES

Rain lily, Windflower

AMARYLLIDACEAE

Genus of clump-forming bulbous perennials with an erect, crocuslike flower on each stem. Frost hardy to frost tender. Needs a sheltered, sunny site and open, well-drained but moist soil. Container-grown bulbs need a dryish, warm period after foliage dies down in summer, followed by copious amounts of water, to stimulate flowering. Propagate by seed in fall or in spring.

***Z. andersonii*.** See *Habranthus tubispathus*.

Z. atamasco (Atamasco lily). Clump-forming, early summer-flowering bulb. H 6–10in (15–25cm), S 3–4in (8–10cm). Basal leaves are very narrow, grasslike and semierect. In spring or summer, a widely funnel-shaped, purple-tinged, white flower, to 4in (10cm) across, is borne on each stem. Z10–11

Z. candida illus. p.424.

Z. carinata illus. p.413.

***Z. citrina*.** Clump-forming, fall-flowering bulb. H 4–6in (10–15cm), S 2–3in (5–8cm). Has rushlike, erect, basal, green leaves. Stems produce funnel-shaped, bright yellow flowers, opening to 1½–2in (4–5cm) across, in fall. Z10–11

Z. grandiflora of gardens. See *Z. minuta*.

Z. minuta, syn. *Z. grandiflora* of gardens, *Z. rosea*. Fall-flowering bulb. H 8in (20cm), S 2in (5cm). Short-tubed, funnel-shaped, sugar-pink flowers are borne among narrowly linear, semierect, green, basal leaves. Z10–11

***Z. robusta*.** See *Habranthus robustus*.

***Z. rosea*.** See *Z. minuta*.

ZIGADENUS

MELANTHIACEAE/LILIACEAE

Genus of summer-flowering bulbs with spikes of star-shaped, 6-petaled flowers. Frost hardy. Requires sun or partial shade and well-drained soil. Water copiously in spring and summer, when in growth; less at other times. Remains dormant in winter. Propagate by division in early spring or by seed sown in fall or spring. ☠ All parts are highly toxic if ingested.

***Z. elegans*.** Clump-forming, summer-flowering bulb. H 12–20in (30–50cm), S 4–6in (10–15cm). Has long, narrow, semi-erect, basal leaves. Every stem bears a spike of greenish-white flowers, ½in (1cm) across, with yellowish-green nectaries. Z9–11

***Z. fremontii*.** Clump-forming, early summer-flowering bulb. H 12–20in (30–50cm), S 4–6in (10–15cm). Has long, strap-shaped, semierect, basal leaves. Stem produces a spike of star-shaped, pale creamy-green flowers, with darker green nectaries on petal bases. Z9–11

***Z. nuttallii*.** Clump-forming, summer-flowering bulb. H 1–2ft (30–60cm), S 3in (8cm). Narrowly strap-shaped, semierect, basal leaves are mid- to dark green. Bears dense spikes of tiny, creamy-yellow flowers, ¼–⅜in (6–8mm) across. Z9–11

ZINGIBER

Ginger

ZINGIBERACEAE

Genus of herbaceous or evergreen perennials, grown for their spicy rhizomes and flowers arranged in a pine-cone-shaped head, borne on separate stems to the leaves. Fully hardy to frost tender. Requires humus-rich, moist but well-drained soil and a position in partial shade. Propagate by division in spring.

***Z. mioga*.** Herbaceous, clump-forming perennial. H 32in (80cm), S 20in (50cm). Short-stemmed spikes, 2–6in (5–15cm) long, of pale cream to yellow flowers, 2in (5cm) across, with reddish-purple bracts, are produced in late summer. Has tall, leafy pseudostems of narrowly lance-shaped, pale green leaves. Z6–12

ZINNIA

ASTERACEAE/COMPOSITAE

Genus of annuals, perennials, and subshrubs, with large, dahlialike flower heads that are excellent for cutting. Frost tender. Needs a position in sun and fertile, well-drained soil. Remove dead flower heads regularly to promote flowering. Propagate by seed sown under glass in early spring.

***Z. elegans*.** Moderately fast-growing, upright, sturdy annual. H 2–2½ft (60–75cm), S 1ft (30cm). Bears ovate to lance-shaped leaves that are pale or mid-green. Purple flower heads, over 2in (5cm) across, are produced in summer and early fall. Hybrids of *Z. elegans* are available in various shades. Z10–11 (min. 41°F/5°C).

Dreamland Series 'Dreamland Scarlet' illus. p.306. **'Dreamland Yellow'**, H and S 1ft (30cm), has large, daisylike, semidouble flower heads in summer and fall. **'Envy'** illus. p.316.

Magellan Series, H 12–14in (30–35cm), S 10–12in (25–30cm), are compact and branching, with double flower heads in cherry-red, orange, pink, salmon-pink and scarlet. **Pop Art Series**, H 2ft (60cm), produce fully double flower heads in white or bright yellow, each petal flecked or streaked with bright red. **'Purple Prince'**, H 30in (75cm), is robust, with fully double, deep pink-purple flower heads, 4–5in (10–12cm) across. **'Queen Lime Red'** (Queen Series), H 30in (75cm), is upright and branching, bearing fully double flower heads with pale red outer petals fading to lime green and deep maroon centers. **Swizzle Series**, H 10–12in (25–30cm), are bushy, with fully double, bicolored flowers, combining cherry red and ivory white or scarlet and yellow. Good in containers.

***Z. marylandica* Zahara Series.** Bushy and branching annuals. H 1–1½ft (30–45cm). Produce flower heads in white and shades of pink, red, rose-red, orange and yellow. Z10–11 (min. 41°F/5°C). **'Fire'** illus. p.325. **'Rose Starlight'** bears single or semidouble, bicolor, creamy white flower heads with fuchsia-pink marks at the base of the petals, resembling a star. **'Sunburst'** has bicolor flower heads that open yellow and develop a deep red stripe down the center of each petal, surrounded by lighter red staining. **'Zahara Starlight Rose'** illus. p.298.

ZIZANIA

POACEAE/GRAMINEAE

See also GRASSES, BAMBOOS, RUSHES, and SEDGES.

Z. aquatica (Canada wild rice). Annual, grasslike, marginal water plant. H 10ft (3m), S 1½ft (45cm). Has grasslike, mid-green leaves and, in summer, grasslike, pale green flowers, followed by ricelike seeds that attract waterfowl. Needs sun; suitable for water up to 9in (23cm) deep. Propagate from seed stored damp and sown in spring. Z5–9

***Zygocactus truncatus*.** See *Schlumbergera truncata*.

ZYGOPETALUM

ORCHIDACEAE

See also ORCHIDS.

***Z. mackaii*.** See *Z. mackayi*.

Z. mackayi, syn. *Z. mackaii*. Evergreen, epiphytic orchid for a cool or intermediate greenhouse. H 1ft (30cm). In fall, produces long sprays of fragrant, brown-blotched, green flowers, 3in (8cm) across, with reddish-indigo veins, and white lips. Ribbed leaves are narrowly ovate, and 1ft (30cm) long. In summer, needs partial shade. Z11–12 (min. 52–55°F/11–13°C; max. 86°F/30°C)

***Z.* Perrenoudii gx** (illus. p.466). Evergreen, epiphytic orchid for a cool or intermediate greenhouse. H 1ft (30cm) Spikes of fragrant, violet-purple-lipped, dark brown flowers, 3in (8cm) across, are borne in winter. Has narrowly ovate, ribbed leaves, 1ft (30cm) long. Requires a position in partial shade in summer. Z11–12 (min. 11–13°C/52–55°F; max. 86°F/30°C)

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Banksian rose, Yellow. See *Rosa banksiae* 'Lutea'.
Banyan. See *Ficus benghalensis*.
Baobab. See *Adansonia*.
Barbados gooseberry. See *Pereskia aculeata*.
Barbados pride. See *Caesalpinia pulcherrima*.
Barbed-wire plant. See *Tylecodon reticulatus*.
Barberry. See *Berberis*.
Barberton daisy. See *Gerbera jamesonii*.
Barley. See *Hordeum*.
Barrenwort. See *Epimedium*.
Bartram's oak. See *Quercus* x *heterophylla*.
Basket grass. See *Oplismenus hirtellus*.
Basswood. See *Tilia americana*.
Bastard balm. See *Melittis*.
Bat flower. See *Tacca chantrieri*.
Bay laurel. See *Laurus nobilis*.
Bay tree. See *Laurus*.
Bay willow. See *Salix pentandra*.
Bayonet plant. See *Aciphylla squarrosa*.
Beach pine. See *Pinus contorta*.
Bead plant. See *Nertera granadensis*.
Bead-tree. See *Melia azedarach*.
Bear grass. See *Dasylirion*.
Bear's breeches. See *Acanthus*.
Bearded bellflower. See *Campanula barbata*.
Beauty berry. See *Callicarpa*.
Beauty bush. See *Kolkwitzia amabilis*.
Bedstraw. See *Galium*.
Bee balm. See *Monarda didyma*.
Beech. See *Fagus*.
Beech fern. See *Phegopteris*.
Beefsteak plant. See *Iresine herbstii*.
Bell heather. See *Erica cinerea*.
Bell-flowered cherry. See *Prunus campanulata*.
Belladonna lily. See *Amaryllis belladonna*.
Bellflower. See *Campanula*.
Bells of Ireland. See *Moluccella laevis*.
Bellwort. See *Uvularia grandiflora*.
Benjamin. See *Lindera benzoin*.
Bentham's cornel. See *Cornus capitata*.
Bergamot. See *Monarda*.
Bermuda lily. See *Lilium longiflorum*.
Berry bladderfern. See *Cystopteris bulbifera*.
Berry heath. See *Erica baccans*.
Besom heath. See *Erica scoparia*.
Betony. See *Stachys officinalis*.
Bhutan pine. See *Pinus wallichiana*.
Big tree. See *Sequoiadendron giganteum*.
Big-cone pine. See *Pinus coulteri*.
Bilberry. See *Vaccinium myrtillus*.
Birch. See *Betula*.
Bird cherry. See *Prunus padus*.
Bird-catcher tree. See *Pisonia umbellifera*.
Bird-of-paradise flower. See *Strelitzia*.
Bird's-eye primrose. See *Primula farinosa*.
Bird's-foot ivy. See *Hedera helix* 'Pedata'.
Bird's-foot violet. See *Viola pedata*.
Bird's-nest fern. See *Asplenium nidus*.
Birthroot. See *Trillium erectum*.
Birthwort. See *Aristolochia*.
Bishop pine. See *Pinus muricata*.
Bishop's cap. See *Astrophytum myriostigma; Mitella*.
Bishop's mitre. See *Epimedium*.
Bishop's weed, Variegated. See *Aegopodium podagraria* 'Variegatum'.
Bistort. See *Persicaria bistorta*.
Biting stonecrop. See *Sedum acre*.
Bitter cress. See *Cardamine*.
Bitter root. See *Lewisia rediviva*.
Bitternut. See *Carya cordiformis*.
Bitternut hickory. See *Carya cordiformis*.
Bittersweet. See *Celastrus*.
Black alder. See *Alnus glutinosa*.
Black bamboo. See *Phyllostachys nigra*.
Black bean. See *Kennedia nigricans*.
Black bean tree. See *Castanospermum australe*.
Black cherry. See *Prunus serotina*.
Black chokeberry. See *Aronia melanocarpa*.
Black cottonwood. See *Populus trichocarpa*.
Black false hellebore. See *Veratrum nigrum*.
Black gum. See *Nyssa sylvatica*.
Black huckleberry. See *Gaylussacia baccata*.
Black Jack oak. See *Quercus marilandica*.
Black mulberry. See *Morus nigra*.
Black oak. See *Quercus velutina*.
Black pine. See *Pinus jeffreyi; Pinus nigra*.
Black poplar. See *Populus nigra*.
Black sarana. See *Fritillaria camschatcensis*.
Black spruce. See *Picea mariana*.
Black tree fern. See *Cyathea medullaris*.
Black walnut. See *Juglans nigra*.
Black willow. See *Salix gracilistyla* 'Melanostachys'.
Black-eyed Susan. See *Rudbeckia fulgida; Thunbergia alata*.
Black-gold philodendron. See *Philodendron melanochrysum*.
Blackberry. See *Rubus*.
Blackberry lily. See *Iris domestica*.
Blackboy. See *Xanthorrhoea*.
Blackthorn. See *Prunus spinosa*.
Bladder cherry. See *Physalis alkekengi*.
Bladder nut. See *Staphylea*.
Bladder senna. See *Colutea arborescens*.
Blanket flower. See *Gaillardia*.
Blazing star. See *Mentzelia lindleyi*.
Bleeding heart. See *Dicentra spectabilis*.
Blessed Mary's thistle. See *Silybum marianum*.
Blood flower. See *Asclepias curassavica; Scadoxus multiflorus* subsp. *katherinae*.
Blood leaf. See *Iresine lindenii*.
Blood lily. See *Haemanthus*.
Bloodroot. See *Sanguinaria canadensis*.
Bloody cranesbill. See *Geranium sanguineum*.
Blue Atlas cedar. See *Cedrus atlantica* f. *glauca*.
Blue bells. See *Mertensia virginica*.
Blue candle. See *Myrtillocactus geometrizans*.
Blue cloud. See *Limonium latifolium*.
Blue cupidone. See *Catananche*.
Blue daisy. See *Felicia*.
Blue dawn flower. See *Ipomoea indica*.
Blue Douglas fir. See *Pseudotsuga menziesii* var. *glauca*.
Blue fescue. See *Festuca glauca*.
Blue flag. See *Iris versicolor*.
Blue grama. See *Bouteloua gracilis*.
Blue holly. See *Ilex* x *meserveae*.
Blue lace flower. See *Trachymene coerulea*.
Blue moor grass. See *Sesleria caerulea*.
Blue oat grass. See *Helictotrichon sempervirens*.
Blue passion flower. See *Passiflora caerulea*.
Blue potato bush. See *Solanum rantonnetii*.
Blue sage. See *Eranthemum pulchellum*.
Blue star. See *Amsonia*.
Blue trumpet vine. See *Thunbergia grandiflora*.
Blue-flowered torch. See *Tillandsia lindenii*.
Bluebell. See *Hyacinthoides*.
Bluebell creeper. See *Sollya*.
Blueberry ash. See *Elaeocarpus cyaneus*.
Bluets. See *Hedyotis*.
Blushing bromeliad. See *Neoregelia carolinae; Nidularium fulgens*.
Blushing philodendron. See *Philodendron erubescens*.
Boat lily. See *Tradescantia spathacea*.
Bog arum. See *Calla palustris*.
Bog bean. See *Menyanthes trifoliata*.
Bog sage. See *Salvia uliginosa*.
Bonin Isles juniper. See *Juniperus procumbens*.
Borage. See *Borago*.
Bosnian pine. See *Pinus heldreichii*.
Boston ivy. See *Parthenocissus tricuspidata*.
Bottlebrush. See *Callistemon*.
Bottlebrush buckeye. See *Aesculus parviflora*.
Bower vine. See *Pandorea jasminoides*.
Bowles's golden grass. See *Milium effusum* 'Aureum'.
Bowles's golden sedge. See *Carex elata* 'Aurea'.
Box. See *Buxus*.
Box elder. See *Acer negundo*.
Box-leaved holly. See *Ilex crenata*.
Bracelet honey myrtle. See *Melaleuca armillaris*.
Bramble. See *Rubus*.
Branched bur reed. See *Sparganium erectum*.
Brandy bottle. See *Nuphar lutea*.
Brass buttons. See *Cotula coronopifolia*.
Brazilian firecracker. See *Manettia luteo-rubra*.
Breath of heaven. See *Diosma ericoides*.
Brewer's spruce. See *Picea breweriana*.
Bridal bouquet. See *Porana paniculata*.
Bridal wreath. See *Francoa appendiculata; Spiraea* 'Arguta'; *Spiraea* x *vanhouttei*.
Brisbane box. See *Lophostemon confertus*.
Bristle club-rush. See *Isolepsis setaceus*.
Bristle-cone pine. See *Pinus aristata*.
Bristle-pointed iris. See *Iris setosa*.
Brittle bladderfern. See *Cystopteris fragilis*.
Broad bucklerfern. See *Dryopteris dilatata*.
Broad-leaved lime. See *Tilia platyphyllos*.
Broadleaf. See *Griselinia littoralis*.
Bromeliad. See feature panel p.471.
Brompton stock. See *Matthiola incana*.
Bronvaux medlar. See +*Crataegomespilus dardarii*.
Broom. See *Cytisus; Genista*.
Brush-box tree. See *Lophostemon confertus*.
Buckbean. See *Menyanthes trifoliata*.
Buckeye. See *Aesculus*.
Buckthorn. See *Rhamnus*.
Buffalo berry. See *Shepherdia argentea*.
Buffalo currant. See *Ribes odoratum*.
Bugle, Pyramidal. See *Ajuga pyramidalis*.
Bull bay. See *Magnolia grandiflora*.

Bullock's heart. See *Annona reticulata*.
Bullock's heart ivy. See *Hedera colchica*.
Bunch-flowered daffodil. See *Narcissus tazetta*.
Bunnies' ears. See *Stachys byzantina*.
Bunny ears. See *Opuntia microdasys*.
Bur oak. See *Quercus macrocarpa*.
Bur reed. See *Sparganium*.
Burnet. See *Sanguisorba*.
Burnet rose. See *Rosa spinosissima*.
Burning bush. See *Dictamnus albus* var. *albus; Bassia scoparia* f. *trichophylla*.
Burr rose. See *Rosa roxburghii*.
Burro's tail. See *Sedum morganianum*.
Bush groundsel. See *Baccharis halimifolia*.
Bush violet. See *Browallia speciosa*.
Busy lizzie. See *Impatiens walleriana cvs*.
Butcher's broom. See *Ruscus aculeatus*.
Butter tree. See *Tylecodon paniculatus*.
Buttercup. See *Ranunculus*.
Butterfly bush. See *Buddleja davidii*.
Butterfly flower. See *Schizanthus*.
Butterfly orchid. See *Psychopsis papilio*.
Butterfly weed. See *Asclepias tuberosa*.
Butternut. See *Juglans cinerea*.
Button-fern. See *Pellaea rotundifolia*.

C

Calamondin. See *Citrus* x *microcarpa*.
Calico bush. See *Kalmia latifolia*.
Calico flower. See *Aristolochia littoralis*.
California allspice. See *Calycanthus occidentalis*.
California bluebell. See *Phacelia campanularia*.
California buckeye. See *Aesculus californica*.
California lilac. See *Ceanothus*.
California nutmeg. See *Torreya californica*.
California poppy. See *Eschscholzia californica*.
Californian laurel. See *Umbellularia californica*.
Callery pear. See *Pyrus calleryana*.
Campernelle jonquil. See *Narcissus* x *odorus*.
Camphor tree. See *Camphora camphora*.
Campion. See *Silene*.
Canada hemlock. See *Tsuga canadensis*.
Canada lily. See *Lilium canadense*.
Canada moonseed. See *Menispermum canadense*.
Canada wild rice. See *Zizania aquatica*.
Canadian burnet. See *Sanguisorba canadensis*.
Canadian columbine. See *Aquilegia canadensis*.
Canadian poplar. See *Populus* x *canadensis*.
Canary creeper. See *Tropaeolum peregrinum*.
Canary Island bellflower. See *Canarina canariensis*.
Canary Island date palm. See *Phoenix canariensis*.
Canary-bird bush. See *Crotalaria agatiflora*.
Candle plant. See *Curio articulata*.
Candytuft. See *Iberis*.
Canoe birch. See *Betula papyrifera*.
Canterbury bells. See *Campanula medium*.
Cape blue water lily. See *Nymphaea capensis*.
Cape dandelion. See *Arctotheca calendula*.
Cape figwort. See *Phygelius capensis*.
Cape grape. See *Rhoicissus capensis*.
Cape honey suckle. See *Tecoma capensis*.
Cape jasmine. See *Gardenia jasminoides*.
Cape leadwort. See *Plumbago auriculata*.
Cape marigold. See *Dimorphotheca*.
Cape myrtle. See *Myrsine africana*.
Cape pondweed. See *Aponogeton distachyos*.
Cape primrose. See *Streptocarpus rexii*.
Cape sundew. See *Drosera capensis*.
Cape tulip. See *Haemanthus coccineus*.
Cappadocian maple. See *Acer cappadocicum*.
Caraway thyme. See *Thymus herba-barona*.
Cardinal climber. See *Ipomoea* x *multifida*.
Cardinal flower. See *Lobelia cardinalis*.
Cardinal's guard. See *Pachystachys coccinea*.
Cardoon. See *Cynara cardunculus*.
Caricature plant. See *Graptophyllum pictum*.
Carline thistle. See *Carlina*.
Carnation. See *Dianthus*.
Carolina allspice. See *Calycanthus floridus*.
Carolina hemlock. See *Tsuga caroliniana*.
Carolina jasmine. See *Gelsemium sempervirens*.
Carpet plant. See *Episcia*.
Caspian locust. See *Gleditsia caspica*.
Cast-iron plant. See *Aspidistra elatior*.
Castor-oil plant. See *Ricinus communis*.
Catalina ironwood. See *Lyonothamnus floribundus*.
Catchfly. See *Silene*.
Catmint. See *Nepeta*.
Cat's claw vine. See *Macfadyena*.
Cat's ears. See *Antennaria; Calochortus*.
Cat's valerian. See *Valeriana officinalis*.
Cat's whiskers. See *Tacca chantrieri*.
Caucasian elm. See *Zelkova carpinifolia*.
Caucasian fir. See *Abies nordmanniana*.
Caucasian lime. See *Tilia* x *euchlora*.
Caucasian oak. See *Quercus macranthera*.
Caucasian peony. See *Paeonia mlokosewitschii*
Caucasian spruce. See *Picea orientalis*.
Caucasian whortleberry. See *Vaccinium arctostaphylos*.
Caucasian wing nut. See *Pterocarya fraxinifolia*.
Cedar. See *Cedrus*.
Cedar of Goa. See *Cupressus lusitanica*.
Cedar of Lebanon. See *Cedrus libani*.
Celandine. See *Chelidonium*.
Celandine crocus. See *Crocus korolkowii*.
Century plant. See *Agave americana*.
Chain cactus. See *Rhipsalis paradoxa*.
Chain fern. See *Woodwardia radicans*.
Chain plant. See *Callisia navicularis*.
Chamomile. See *Chamaemelum*.
Channelled heath. See *Erica canaliculata*.
Chaste tree. See *Vitex agnus-castus*.
Chatham Island forget-me-not. See *Myosotidium hortensia*.
Checkerberry. See *Gaultheria procumbens*.
Cheddar pink. See *Dianthus gratianopolitanus*.
Cherimoya. See *Annona*.
Cherry laurel. See *Prunus laurocerasus*.
Cherry pie. See *Heliotropium arborescens*.
Cherry plum. See *Prunus cerasifera*.
Cherry, Ornamental. See *Prunus*.
Chestnut. See *Castanea*.
Chestnut vine. See *Tetrastigma voinierianum*.
Chestnut-leaved oak. See *Quercus castaneifolia*.
Chicory. See *Cichorium*.
Chile nut. See *Gevuina avellana*.
Chile pine. See *Araucaria araucana*.
Chilean bamboo. See *Chusquea culeou*.
Chilean bellflower. See *Lapageria rosea*.
Chilean blue crocus. See *Tecophilaea cyanocrocus*.
Chilean fire bush. See *Embothrium*.
Chilean glory flower. See *Eccremocarpus scaber*.
Chilean hazel. See *Gevuina avellana*.
Chilean incense cedar. See *Austrocedrus chilensis*.
Chilean jasmine. See *Mandevilla laxa*.
Chilean laurel. See *Laurelia sempervirens*.
Chilean wine palm. See *Jubaea chilensis*.
Chilli pepper. See *Capsicum*.
Chimney bellflower. See *Campanula pyramidalis*.
China aster. See *Callistephus*.
Chincherinchee. See *Ornithogalum thyrsoides*.
Chinese anise. See *Illicium anisatum*.
Chinese box. See *Murraya paniculata*.
Chinese box thorn. See *Lycium barbarum*.
Chinese dwarf banana. See *Musa lasiocarpa*.
Chinese elm. See *Ulmus parvifolia*.
Chinese evergreen. See *Aglaonema*.
Chinese fan palm. See *Livistona chinensis*.
Chinese fir. See *Cunninghamia lanceolata*.
Chinese fountain grass. See *Pennisetum alopecuroides*.
Chinese fountain palm. See *Livistona chinensis*.
Chinese fringe tree. See *Chionanthus retusus*.
Chinese gooseberry. See *Actinidia deliciosa*.
Chinese hat plant. See *Holmskioldia sanguinea*.
Chinese hibiscus. See *Hibiscus rosa-sinensis*.
Chinese horse-chestnut. See *Aesculus chinensis*.
Chinese juniper. See *Juniperus chinensis*.
Chinese lantern. See *Physalis*.
Chinese lanterns. See *Nymania capensis*.
Chinese necklace poplar. See *Populus lasiocarpa*.
Chinese parasol tree. See *Firmiana simplex*.
Chinese privet. See *Ligustrum lucidum*.
Chinese redbud. See *Cercis chinensis*.
Chinese spinach. See *Amaranthus tricolor*.
Chinese trumpet creeper. See *Campsis grandiflora*.
Chinese tulip tree. See *Liriodendron chinense*.
Chinese walnut. See *Juglans cathayensis*.
Chinese wing nut. See *Pterocarya stenoptera*.
Chinese wisteria. See *Wisteria sinensis*.
Chinese witch hazel. See *Hamamelis mollis*.
Chinese-lantern lily. See *Sandersonia aurantiaca*.
Chinquapin rose. See *Rosa roxburghii*.
Chives. See *Allium schoenoprasum*.
Chocolate cosmos. See *Cosmos atrosanguineus*.
Chocolate vine. See *Akebia quinata*.
Chokeberry. See *Aronia*.
Christmas begonia. See *Begonia* 'Gloire de Lorraine'.
Christmas berry. See *Heteromeles salicifolia*.
Christmas box. See *Sarcococca*.
Christmas cactus. See *Schlumbergera* x *buckleyi*.
Christmas fern. See *Polystichum acrostichoides*.
Christmas rose. See *Helleborus niger*.
Christ's thorn. See *Paliurus spina-christi*.
Chusan palm. See *Trachycarpus fortunei*.
Cider gum. See *Eucalyptus gunnii*.
Cigar flower. See *Cuphea ignea*.
Cinnamon fern. See *Osmunda cinnamomea*.
Cinquefoil, Alpine. See *Potentilla crantzii*.
Claret ash. See *Fraxinus angustifolia* subsp. *oxycarpa* 'Raywood'.
Climbing butcher's broom. See *Semele androgyna*.
Climbing dahlia. See *Hidalgoa*.
Climbing fig. See *Ficus pumila*.
Climbing fumitory. See *Adlumia fungosa*.
Climbing hempweed. See *Mikania scandens*.
Climbing hydrangea. See *Hydrangea anomala* subsp. *petiolaris*.
Cloth-of-gold crocus. See *Crocus angustifolius*.
Cloud grass. See *Aichryson* x *domesticum* 'Variegatum'.
Clover. See *Trifolium*.
Clover-leaf ivy. See *Hedera helix* 'Shamrock'.
Cluster pine. See *Pinus pinaster*.
Coast redwood. See *Sequoia sempervirens*.
Cobnut. See *Corylus avellana*.
Cobweb houseleek. See *Sempervivum arachnoideum*.
Cock's comb. See *Erythrina crista-galli*.
Cock's foot. See *Dactylis glomerata*.
Cockscomb. See *Celosia*.
Cockspur coral-tree. See *Erythrina crista-galli*.
Cockspur thorn. See *Crataegus crus-galli*.
Coffee, Wild. See *Polyscias guilfoylei*.
Coffin juniper. See *Juniperus recurva* var. *coxii*.
Coleus, Prostrate. See *Plectranthus oertendahlii*.
Colombian ball cactus. See *Parodia erinacea*.
Colorado spruce. See *Picea pungens*.
Columbine. See *Aquilegia*.
Comfrey. See *Symphytum*.
Common alder. See *Alnus glutinosa*.
Common arrowhead. See *Sagittaria sagittifolia*.
Common ash. See *Fraxinus excelsior*.
Common aspen. See *Populus tremula*.
Common Australian heath. See *Epacris impressa*.
Common beech. See *Fagus sylvatica*.
Common box. See *Buxus sempervirens*.
Common broom. See *Cytisus scoparius*.
Common camassia. See *Camassia quamash*.
Common cat's claw vine. See *Macfadyena unguis-cati*.
Common coral tree. See *Erythrina crista-galli*.
Common devil's claw. See *Proboscidea louisianica*.
Common dogwood. See *Cornus sanguinea*.
Common elder. See *Sambucus nigra*.
Common gardenia. See *Gardenia jasminoides*.
Common German flag. See *Iris germanica*.
Common hackberry. See *Celtis occidentalis*.
Common hawthorn. See *Crataegus monogyna*.
Common holly. See *Ilex aquifolium*.
Common honeysuckle. See *Lonicera periclymenum*.
Common hop. See *Humulus lupulus*.
Common hornbeam. See *Carpinus betulus*.
Common houseleek. See *Sempervivum tectorum*.
Common hydrangea. See *Hydrangea macrophylla*.
Common ivy. See *Hedera helix*.
Common jasmine. See *Jasminum officinale*.
Common juniper. See *Juniperus communis*.
Common laburnum. See *Laburnum anagyroides*.
Common lime. See *Tilia* x *europaea*.
Common mandrake. See *Mandragora officinarum*.
Common morning glory. See *Ipomoea purpurea*.
Common moss rose. See *Rosa* x *centifolia* 'Muscosa'.
Common myrtle. See *Myrtus communis*.
Common net bush. See *Calothamnus quadrifidus*.
Common oak. See *Quercus robur*.
Common passion flower. See *Passiflora caerulea*.
Common pear. See *Pyrus communis*.
Common pitcher plant. See *Sarracenia purpurea*.
Common polypody. See *Polypodium vulgare*.
Common quaking grass. See *Briza media*.
Common rue. See *Ruta graveolens*.
Common sage. See *Salvia officinalis*.
Common snowdrop. See *Galanthus nivalis*.
Common spruce. See *Picea abies*.
Common staghorn fern. See *Platycerium bifurcatum*.
Common stonecrop. See *Sedum acre*.
Common trumpet creeper. See *Campsis radicans*.
Common unicorn plant. See *Proboscidea louisianica*.
Common valerian. See *Valeriana officinalis*.
Common yam. See *Dioscorea disolor*.
Compass plant. See *Silphium laciniatum*.
Cone ginger. See *Alpinia purpurata*.
Coneflower. See *Echinacea; Rudbeckia*.
Confederate jasmine. See *Trachelospermum jasminoides*.
Confederate rose. See *Hibiscus mutabilis*.
Cootamundra wattle. See *Acacia baileyana*.
Copa de oro. See *Solandra maxima*.
Copey. See *Clusia rosea*.
Copihue. See *Lapageria rosea*.
Copper beech. See *Fagus sylvatica* f. *atropunicea*.
Copperleaf. See *Acalypha wilkesiana*.
Coquito. See *Jubaea chilensis*.
Coral berry. See *Aechmea fulgens*.
Coral bush. See *Templetonia retusa*.
Coral cactus. See *Rhipsalis cereuscula*.
Coral flower. See *Heuchera*.
Coral gem. See *Lotus berthelotii*.
Coral honeysuckle. See *Lonicera sempervirens*.
Coral pea. See *Hardenbergia*.
Coral plant. See *Berberidopsis corallina; Russelia equisetiformis*.
Coral tree. See *Erythrina*.
Coral vine. See *Antigonon*.
Coral-bark maple. See *Acer palmatum* 'Sango-kaku'.
Coralberry. See *Ardisia crenata; Symphoricarpos orbiculatus*.
Cork oak. See *Quercus suber*.
Cork tree, Amur. See *Phellodendron amurense*.
Corkscrew rush. See *Juncus effusus* f. *spiralis*.
Corn cockle. See *Agrostemma*.
Corn plant. See *Dracaena fragrans*.
Corn poppy. See *Papaver rhoeas*.
Cornelian cherry. See *Cornus mas*.
Cornflower. See *Centaurea cyanus*.
Cornish elm. See *Ulmus minor* 'Cornubiensis'.
Cornish golden elm. See *Ulmus minor* 'Dicksonii'.
Cornish heath. See *Erica vagans*.
Corsican heath. See *Erica terminalis*.
Corsican hellebore. See *Helleborus argutifolius*.
Corsican mint. See *Mentha requienii*.
Corsican pine. See *Pinus nigra* subsp. *laricio*.
Cotoneaster, Tree. See *Cotoneaster frigidus*.
Cotton ball. See *Espostoa lanata*.
Cotton lavender. See *Santolina chamaecyparissus*.
Cotton rose. See *Hibiscus mutabilis*.
Cotton thistle. See *Onopordum acanthium*.
Cotton tree, Silk. See *Ceiba pentandra*.
Cottonwood. See *Populus*.
Cottonwood, Eastern. See *Populus deltoides*.
Coulter pine. See *Pinus coulteri*.
Cowberry. See *Vaccinium vitis-idaea*.
Cowslip. See *Primula veris*.
Cowtail pine. See *Cephalotaxus harringtonii*.
Coyote willow. See *Salix exigua*.
Crab apple. See *Malus*.
Crab cactus. See *Schlumbergera truncata*.
Crack willow. See *Salix* x *fragilis*.
Cradle orchid. See *Anguloa clowesii*.
Cranesbill. See *Geranium*.
Cream cups. See *Platystemon californicus*.
Creeping blueblossom. See *Ceanothus thyrsiflorus* var. *repens*.
Creeping bluets. See *Hedyotis michauxii*.
Creeping box. See *Mitchella repens*.
Creeping buttons. See *Peperomia rotundifolia*.
Creeping Charlie. See *Pilea nummulariifolia*.
Creeping dogwood. See *Cornus canadensis*.
Creeping fig. See *Ficus pumila*.
Creeping juniper. See *Juniperus horizontalis*.
Creeping phlox. See *Phlox stolonifera*.
Creeping willow. See *Salix repens*.

Crepe myrtle. See *Lagerstroemia indica*.
Crested moss rose. See *Rosa* x *centifolia* 'Cristata'.
Cretan dittany. See *Origanum dictamnus*.
Cricket-bat willow. See *Salix alba* var. *caerulea*.
Crimean lime. See *Tilia* x *euchlora*.
Crimson bottlebrush. See *Callistemon citrinus* 'Splendens'.
Crimson glory vine. See *Vitis coignetiae*.
Cross vine. See *Bignonia capreolata*.
Cross-leaved heath. See *Erica tetralix*.
Croton. See *Codiaeum variegatum* var. *pictum*.
Crowfoot, Water. See *Ranunculus aquatilis*.
Crown imperial. See *Fritillaria imperialis*.
Crown of thorns. See *Euphorbia milii*.
Crucianella stylosa. See *Phuopsis stylosa*.
Cruel plant. See *Araujia sericifera*.
Crusaders' spears. See *Drimia maritima*.
Crystal anthurium. See *Anthurium crystallinum*.
Cuban royal palm. See *Roystonea regia*.
Cuckoo flower. See *Cardamine pratensis*.
Cuckoo pint. See *Arum*.
Cucumber tree. See *Magnolia acuminata*.
Cup-and-saucer vine. See *Cobaea scandens*.
Cupid peperomia. See *Peperomia scandens*.
Cupid's dart. See *Catananche*.
Curled pondweed. See *Potamogeton crispus*.
Currant. See *Ribes*.
Curry plant. See *Helichrysum italicum* subsp. *serotinum*.
Cushion bush. See *Leucophyta*.
Custard apple. See *Annona*.
Cypress. See *Cupressus*.
Cypress spurge. See *Euphorbia cyparissias*.
Cypress vine. See *Ipomoea quamoclit*.
Cyprus turpentine. See *Pistacia terebinthus*.

D

Daffodil. See *Narcissus*.
Dahlia, Climbing. See *Hidalgoa*.
Daimio oak. See *Quercus dentata*.
Daisy. See *Bellis*.
Daisy bush. See *Olearia*.
Dalmatian bellflower. See *Campanula portenschlagiana*.
Dalmatian iris. See *Iris pallida*.
Dalmatian laburnum. See *Petteria ramentacea*.
Dalmatian toadflax. See *Linaria dalmatica*.
Dame's violet. See *Hesperis matronalis*.
Dancing-doll orchid. See *Gomesa flexuosum*.
Darjeeling banana. See *Musa sikkimensis*.
Darley Dale heath. See *Erica* x *darleyensis*.
Darling pea. See *Swainsona galegifolia*.
Darwin's barberry. See *Beriberis darwinii*.
David's peach. See *Prunus davidiana*.
David's pine. See *Pinus armandii*.
Dawn redwood. See *Metasequoia glyptostroboides*.
Day flower. See *Commelina coelestis*.
Daylily. See *Hemerocallis*.
Deadnettle. See *Lamium*.
Delavay's fir. See *Abies delavayi*.
Delta maidenhair. See *Adiantum raddianum*.
Deodar. See *Cedrus deodara*.
Deptford pink. See *Dianthus armeria*.
Desert candle. See *Eremurus*.
Desert fan palm. See *Washingtonia filifera*.
Desert rose. See *Adenium*.
Devil-in-a-bush. See *Nigella damascena*.
Devil's apple. See *Mandragora officinarum*.
Devil's fig. See *Argemone mexicana*.
Devil's ivy. See *Epipremum aureum* 'Marble Queen'.
Dickson's golden elm. See *Ulmus minor* 'Dicksonii'.
Digger's speedwell. See *Parahebe perfoliata*.
Dittany. See *Origanum*.
Dog's fennel. See *Anthemis*.
Dog's-tooth violet. See *Erythronium*.
Dogwood. See *Cornus*.
Doll's eyes. See *Actaea pachypoda*.
Donkey-tail. See *Sedum morganianum*.
Dorset heath. See *Erica ciliaris*.
Double common snowdrop. See *Galanthus nivalis* 'Flore Pleno'.
Double meadow buttercup. See *Ranunculus acris* 'Flore Pleno'.
Double sea campion. See *Silene uniflora* 'Robin Whitebreast'.
Double soapwort. See *Saponaria officinalis* 'Rubra Plena'.
Douglas fir. See *Pseudotsuga menziesii*.
Dove tree. See *Davidia involucrata*.
Downy cherry. See *Prunus* tomentosa.
Dragon tree. See *Dracaena draco*.
Dragon's arum. See *Dracunculus vulgaris*.
Dragon's head. See *Dracocephalum*.
Dragon's mouth. See *Horminum pyrenaicum*.
Dragon's-claw willow. See *Salix babylonica* var. *pekinensis* 'Tortuosa'.
Drooping juniper. See *Juniperus recurva*.
Dropwort. See *Filipendula vulgaris*.
Drumstick primula. See *Primula denticulata*.
Drunkard's dream. See *Hatiora salicornioides*.
Duck potato. See *Sagittaria latifolia*.
Duckweed. See *Wolffia*.
Duke of Argyll's tea-tree. See *Lycium barbarum*.
Dumb cane. See *Dieffenbachia*.
Dumpling cactus. See *Lophophora williamsii*.
Durmast oak. See *Quercus petraea*.
Dusky coral pea. See *Kennedia rubicunda*.
Dusky cranesbill. See *Geraneum phaeum*.
Dutch crocus. See *Crocus vernus*.
Dutch elm. See *Ulmus* x *hollandica*.
Dutchman's breeches. See *Dicentra cucullaria*.
Dutchman's trousers. See *Dicentra spectabilis*.
Dwarf bearded iris. See *Iris pumila*.
Dwarf coral pea. See *Hardenbergia violacea*.
Dwarf fan palm. See *Chamaerops*.
Dwarf maidenhair fern. See *Adiantum aleuticum* 'Subpumilum'.
Dwarf mountain palm. See *Chamaedorea elegans*.
Dwarf palmetto. See *Sabal minor*.
Dwarf pine. See *Pinus mugo*.
Dwarf pomegranate. See *Punica granatum* var. *nana*.
Dwarf Siberian pine. See *Pinus pumila*.
Dwarf Spanish heath. See *Erica umbellata*.
Dwarf white wood lily. See *Trillium nivale*.
Dwarf white-stripe bamboo. See *Pleioblastus variegatus*.
Dyer's greenweed. See *Genista tinctoria*.

E

Early spider orchid. See *Ophrys sphegodes*.
East Indian arrowroot. See *Tacca leontopetaloides*.
Easter cactus. See *Hatiora gaertneri; Hatiora rosea*..
Easter lily. See *Lilium longiflorum*.
Eastern cottonwood. See *Populus deltoides*.
Eastern hemlock. See *Tsuga canadensis*.
Eastern redbud. See *Cercis canadensis*.
Eastern white cedar. See *Thuja occidentalis*.
Eastern white pine. See *Pinus strobus*.
Eau-de-Cologne mint. See *Mentha* x *piperita* f. *citrata*.
Edelweiss. See *Leontopodium*.
Edible banana. See *Musa acuminata* 'Dwarf Cavendish'.
Eel grass. See *Vallisneria spiralis*.
Eglantine. See *Rosa rubiginosa*.
Egret flower. See *Habenaria radiata*.
Egyptian star. See *Pentas lanceolata*.
Elder. See *Sambucus*.
Elephant apple. See *Dillenia indica*.
Elephant bush. See *Portulacaria afra*.
Elephant's ear. See *Philodendron domesticum*.
Elephant's ear, Giant. See *Alocasia macrorrhiza*.
Elephant's foot. See *Beaucarnea recurvata; Dioscorea elephantipes*.
Elkwood. See *Magnolia tripetala*.
Elm. See *Ulmus*.
Emerald ripple. See *Peperomia caperata*.
Endive. See *Cichorium*.
Engelmann spruce. See *Picea engelmannii*.
English bluebell. See *Hyacinthoides non-scripta*.
English elm. See *Ulmus procera*.
English iris. See *Iris latifolia*.
English ivy. See *Hedera helix*.
English lavender. See *Lavandula* x *intermedia*.
Epaulette tree. See *Pterostyrax hispida*.
Eryngo. See *Eryngium*.
Ethiopian banana. See *Ensete ventricosum*.
Etruscan honeysuckle. See *Lonicera etrusca*.
European dog's-tooth violet. See *Erythronium dens-canis*.
European larch. See *Larix decidua*.
European white lime. See *Tilia tomentosa*.
Evening primrose. See *Oenothera*.
Evening trumpet. See *Gelsemium sempervirens*.
Everlasting flower. See *Xerochrysum bracteatum*.
Everlasting pea. See *Lathyrus grandiflorus; Lathyrus latifolius; Lathyrus sylvestris*.
Exeter elm. See *Ulmus glabra* 'Exoniensis'.
Eyelash begonia. See *Begonia bowerae*.

F

Fair maids of France. See *Saxifraga granulata*.
Fairy bells. See *Disporum*.
Fairy duster. See *Calliandra eriophylla*.
Fairy foxglove. See *Erinus*.
Fairy moss. See *Azolla filiculoides*.
Fairy thimbles. See *Campanula cochleariifolia*.
Falling stars. See *Campanula isophylla*.
False acacia. See *Robinia pseudoacacia*.
False African violet. See *Streptocarpus saxorum*.
False anemone. See *Anemonopsis*.
False cypress. See *Chamaecyparis*.
False heather. See *Cuphea hyssopifolia*.
False indigo. See *Baptisia australis*.
False jasmine. See *Gelsemium sempervirens*.
False oat grass. See *Arrhenatherum elatius*.
False saffron. See *Carthamus tinctorius*.
False Solomon's seal. See *Maianthemum*.
False spikenard. See *Maianthemum racemosum*.
False yellow jasmine. See *Gelsemium sempervirens*.
Fat pork tree. See *Clusia rosea*.
Feather grape hyacinth. See *Muscari comosum* 'Plumosum'.
Feather reed grass. See *Calamagrostis* x *acutiflora*.
Feather-top. See *Pennisetum villosum*.
Fennel. See *Foeniculum vulgare*.
Fennel-leaved pondweed. See *Potamogeton pectinatus*.
Fern-leaf aralia. See *Polyscias filicifolia*.
Fern-leaved beech. See *Fagus sylvatica* var. *heterophylla* 'Aspleniifolia'.
Feverfew. See *Tanacetum parthenium*.
Fiddle-leaf fig. See *Ficus lyrata*.
Field poppy. See *Papaver rhoeas*.
Filbert. See *Corylus maxima*.
Finger-leaved ivy. See *Hedera hibernica* 'Digitata'.
Fire heath. See *Erica cerinthoides*.
Fire lily. See *Lilium bulbiferum*.
Firecracker vine. See *Manettia cordifolia*.
Firethorn. See *Pyracantha*.
Fishbone cactus. See *Epiphyllum anguliger*.
Fishpole bamboo. See *Phyllostachys aurea*.
Fishtail fern. See *Cyrtomium falcatum*.
Five finger. See *Neopanax arboreum*.
Five fingers. See *Syngonium auritum*.
Five-leaved ivy. See *Parthenocissus quinquefolia*.
Five-spot baby. See *Nemophila maculata*.
Flaky juniper. See *Juniperus squamata*.
Flame azalea. See *Rhododendron calendulaceum*.
Flame coral tree. See *Erythrina coralloides*.
Flame creeper. See *Tropaeolum speciosum*.
Flame flower. See *Pyrostegia venusta*.
Flame nasturtium. See *Tropaeolum speciosum*.
Flame nettle. See *Solenostemon*.
Flame tree, Illawarra. See *Brachychiton acerifolius*.
Flame vine. See *Pyrostegia venusta*.
Flame violet. See *Episcia*.
Flame-of-the-forest. See *Spathodea campanulata*
Flaming Katy. See *Kalanchoe blossfeldiana*.
Flaming sword. See *Vriesea splendens*.
Flamingo flower. See *Anthurium scherzerianum*.
Flannel bush. See *Fremontodendron*.
Floating water plantain. See *Luronium natans*.
Flora's paintbrush. See *Emilia coccinea*.
Florist's cineraria. See *Pericallis* x *hybrida*.
Floss flower. See *Ageratum*.
Floss silk tree. See *Chorisia speciosa*.
Flower-of-the-hour. See *Hibiscus trionum*.
Flowering banana. See *Musa ornata*.
Flowering currant. See *Ribes sanguineum*.
Flowering dogwood. See *Cornus florida*.
Flowering quince. See *Chaenomeles*.
Flowering raspberry. See *Rubus odoratus*.
Flowering rush. See *Butomus umbellatus*.
Flowering tobacco. See *Nicotiana sylvestris*.
Fly honeysuckle. See *Lonicera xylosteum*.
Flytrap, Venus. See *Dionaea muscipula*.
Foam of May. See *Spiraea* 'Arguta'.
Foamflower. See *Tiarella*.
Foothill penstemon. See *Penstemon heterophyllus*.
Forget-me-not. See *Myosotis*.
Forrest fir. See *Abies forrestii*.
Fountain bamboo. See *Fargesia nitida*.
Fountain flower. See *Ceropegia sandersonii*.
Four o'clock flower. See *Mirabilis jalapa*.
Fox nuts. See *Euryale*.
Foxglove. See *Digitalis*.
Foxglove tree. See *Paulownia tomentosa*.
Foxtail barley. See *Hordeum jubatum*.
Foxtail fern. See *Asparagus densiflorus* 'Myersii'.
Foxtail lily. See *Eremurus*.
Foxtail millet. See *Setaria italica*.
Fragrant olive. See *Osmanthus fragrans*.
Fragrant snowbell. See *Styrax obassia*.
Frangipani. See *Plumeria*.
Freckle face. See *Hypoestes phyllostachya*.
French honeysuckle. See *Hedysarum coronarium*.
French lavender. See *Lavandula dentata; Lavandula stoechas*.
French marigold. See *Tagetes patula*.
French plantain. See *Musa acuminata* 'Dwarf Cavendish'.
Friendship plant. See *Pilea involucrata*.
Friendship tree. See *Crassula ovata*.
Fringe tree. See *Chionanthus*.
Fringecups. See *Tellima grandiflora*.
Fringed waterlily. See *Nymphoides peltata*.
Fritillary. See *Fritillaria*.
Fuchsia begonia. See *Begonia foliosa* var. *miniata*.
Fuchsia, Tree. See *Fuchsia arborescens*.
Full moon maple. See *Acer japonicum*.

G

Galingale. See *Cyperus longus*.
Gandergoose. See *Anacamptis morio*.
Garden loosestrife. See *Lysimachia punctata*.
Gardener's garters. See *Phalaris arundinacea* var. *picta*.
Gardenia, Common. See *Gardenia augusta*.
Garland flower. See *Hedychium coronarium*.
Gay feather, Kansas. See *Liatris pycnostachya*.
Gay feathers. See *Liatris*.
Gean. See *Prunus avium*.
Gentian. See *Gentiana*.
Geraldton waxflower. See *Chamelaucium uncinatum*.
Geranium. See *Pelargonium*.
Geranium azalea. See *Polyscias guilfoylei*.
German ivy. See *Senecio mikanioides*.
Ghost tree. See *Davidia involucrata*.
Ghost weed. See *Euphorbia marginata*.
Giant Burmese honeysuckle. See *Lonicera hildebrandiana*.
Giant buttercup. See *Ranunculus lyallii*.
Giant cowslip. See *Primula florindae*.
Giant elephant's ear. See *Alocasia macrorrhiza*.
Giant fennel. See *Ferula communis*.
Giant fir. See *Abies grandis*.
Giant grenadilla. See *Passiflora quadrangularis*.
Giant holly fern. See *Polystichum munitum*.
Giant larkspur. See *Consolida ajacis* Giant Imperial Series.
Giant lily. See *Cardiocrinum*.
Giant pineapple flower. See *Eucomis pole-evansii*.
Giant redwood. See *Sequoiadendron giganteum*.
Giant reed. See *Arundo donax*.
Giant scabious. See *Cephalaria gigantea*.
Giant Spaniard. See *Aciphylla scott-thomsonii*.
Giant staghorn fern. See *Platycerium superbum*.
Giant wood fern. See *Dryopteris goldieana*.
Gillyflower. See *Matthiola*.
Ginger. See *Zingiber*.
Gingerlily. See *Hedychium*.
Gippsland fountain palm. See *Livistona australis*.
Gladwin. See *Iris foetidissima*.
Gland bellflower. See *Adenophora*.
Glastonbury thorn. See *Crataegus monogyna* 'Biflora'.
Globe amaranth. See *Gomphrena globosa*.
Globe daisy. See *Globularia*.
Globe thistle. See *Echinops*.
Globeflower. See *Trollius*.
Glory bush. See *Tibouchina urvilleana*.
Glory vine. See *Eccremocarpus scaber*.
Glory-of-the-sun. See *Leucocoryne ixioides*.
Gloxinia. See *Sinningia speciosa*.
Goat willow. See *Salix caprea*.
Goat's beard. See *Aruncus dioicus*.
Goat's rue. See *Galega*.
Gold dust. See *Aurinia saxatilis*.
Golden arum lily. See *Zantedeschia elliottiana*.
Golden ball cactus. See *Parodia leninghausii*.
Golden bamboo. See *Phyllostachys aurea*.

Golden barrel cactus. See *Echinocactus grusonii*.
Golden bell. See *Forsythia suspensa*.
Golden chain. See *Laburnum anagyroides*.
Golden club. See *Orontium aquaticum*.
Golden creeping Jenny. See *Lysimachia nummularia* 'Aurea'.
Golden elder. See *Sambucus nigra* 'Aurea'.
Golden fairy lantern. See *Calochortus amabilis*.
Golden flax. See *Linum flavum*.
Golden foxtail. See *Alopecurus pratensis* 'Aureovariegatus'.
Golden globe tulip. See *Calochortus amabilis*.
Golden larch. See *Pseudolarix amabilis*.
Golden male fern. See *Dryopteris affinis*.
Golden oats. See *Stipa gigantea*.
Golden polypody. See *Phlebodium aureum*.
Golden poplar. See *Populus* x *canadensis* 'Aurea'.
Golden rod. See *Solidago*.
Golden saxifrage. See *Chrysosplenium*.
Golden shower. See *Cassia fistula; Pyrostegia venusta*.
Golden Spaniard. See *Aciphylla aurea*.
Golden spiderlily. See *Lycoris aurea*.
Golden top. See *Lamarckia aurea*.
Golden trumpet. See *Allamanda cathartica*.
Golden trumpet tree. See *Tabebuia chrysantha*.
Golden weeping willow. See *Salix* x *sepulcralis* 'Chrysocoma'.
Golden willow. See *Salix alba* var. *vitellina*.
Golden wonder. See *Senna didymobotrya*.
Golden wood millet. See *Milium effusum* 'Aureum'.
Golden yarrow. See *Eriophyllum*.
Golden-chalice vine. See *Solandra maxima*.
Golden-eyed grass. See *Sisyrinchium californicum*.
Golden-feather palm. See *Dypsis lutescens*.
Golden-groove bamboo. See *Phyllostachys aureosulcata*.
Golden-rain tree. See *Koelreuteria paniculata*.
Golden-rayed lily of Japan. See *Lilium auratum*.
Goldfish plant. See *Columnea gloriosa*.
Goldilocks. See *Galatella linosyris*.
Gold lace cactus. See *Mammillaria elongata*.
Good-luck plant. See *Cordyline fruticosa*.
Goodyer's elm. See *Ulmus minor* subsp. *angustifolia*.
Gorgon plant. See *Euryale*.
Gorgon's head. See *Euphorbia gorgonis*.
Gorse. See Ulex *europaeus*.
Gout weed. See *Aegopodium*.
Grama, Blue. See *Bouteloua gracilis*.
Grand fir. See *Abies grandis*.
Granite bottlebrush. See *Melaleuca elliptica*.
Granny's bonnets. See *Aquilegia vulgaris*.
Grape hyacinth. See *Muscari*.
Grape ivy. See *Cissus rhombifolia*.
Grape vine. See *Vitis vinifera*.
Grass of Parnassus. See *Parnassia palustris*.
Grass tree. See *Xanthorrhoea*.
Grass widow. See *Olsynium douglasii*.
Grass, Golden-eyed. See *Sisyrinchium californicum*.
Grass-leaved daylily. See *Hemerocallis minor*.
Grassy bells. See *Edraianthus*.
Great burnet. See *Sanguisorba officinalis*.
Great Solomon's seal. See *Polygonatum biflorum*.
Great white cherry. See *Prunus* 'Taihaku'.
Great-leaved magnolia. See *Magnolia macrohpylla*.
Greater celandine. See *Chelidonium*.
Greater periwinkle. See *Vinca major*.
Greater pond sedge. See *Carex riparia*.
Greater quaking grass. See *Briza maxima*.
Greater woodrush. See *Luzula sylvatica*.
Grecian strawberry tree. See *Arbutus andrachne*.
Greek fir. See *Abies cephalonica*.
Green earth star. See *Cryptanthus acaulis*.
Green hellebore. See *Helleborus viridis*.
Green-veined orchid. See *Anacamptis morio*.
Greenweed, Dyers'. See *Genista tinctoria*.
Grenadilla, Giant. See *Passiflora quadrangularis*.
Grey alder. See *Alnus incana*.
Grey fescue. See *Festuca glauca*.
Grey poplar. See *Populus* x *canescens*.
Ground elder. See *Aegopodium*.
Ground ivy. See *Glechoma*.
Groundsel, Bush. See *Baccharis halimifolia*.
Guava, Pineapple. See *Acca sellowiana*.
Guelder rose. See *Viburnum opulus*.
Guernsey lily. See *Nerine sarniensis*.
Gum. See *Eucalyptus*.
Gum plant. See *Grindelia*.
Gum tree. See *Eucalyptus*.

H

Hackberry. See *Celtis*.
Hairy canary clover. See *Lotus hirsutus*.
Hard fern. See *Blechnum spicant*.
Hard shield fern. See *Polystichum aculeatum*.
Hardy age. See *Eupatorium rugosum*.
Hare's ear, Shrubby. See *Bupleurum fruticosum*.
Hare's-foot fern. See *Davallia canariensis*.
Hare's-tail grass. See *Lagurus ovatus*.
Harebell poppy. See *Meconopsis quintuplinervia*.
Harlequin flower. See *Sparaxis*.
Hart's-tongue fern. See *Asplenium scolopendrium*.
Hawaiian hibiscus. See *Hibiscus rosa-sinensis*.
Hawk's beard. See *Crepis*.
Hawkweed. See *Hieracium*.
Hawthorn. See *Crataegus*.
Hawthorn maple. See *Acer crataegifolium*.
Hazel. See *Corylus*.
Headache tree. See *Umbellularia*.
Heart leaf. See *Philodendron* hederaceum.
Heart of flame. See *Bromelia balansae*.
Heart pea. See *Cardiospermum halicacabum*.
Heart seed. See *Cardiospermum*.
Heart vine. See *Ceropegia linearis* subsp. *woodii*.
Hearts-and-honey vine. See *Ipomoea* x *multifida*.
Heartsease. See *Viola tricolor*.
Heath. See *Erica*.
Heath banksia. See *Banksia ericifolia*.
Heather. See *Calluna*.
Heavenly bamboo. See *Nandina domestica*.
Hebe, Disk-leaved. See *Hebe pinguifolia*.
Hedge bamboo. See *Bambusa multiplex*.
Hedgehog broom. See *Erinacea anthyllis*.
Hedgehog holly. See *Ilex aquifolium* 'Ferox'.
Helen's flower. See *Helenium*.
Heliosperma alpestris. See *Silene alpestris*.
Heliotrope. See *Heliotropium*.
Heliotrope, Winter. See *Petasites fragrans*.
Hellebore. See *Helleborus*.
Helmet flower. See *Aconitum napellus*.
Hemlock. See *Tsuga*.
Hemp agrimony. See *Eupatorium*.
Hemp vine. See *Mikania scandens*.
Hen-and-chicken fern. See *Asplenium bulbiferum*.
Herald's trumpet. See *Beaumontia grandiflora*.
Heron's bill. See *Erodium*.
Heropito. See *Pseudowintera axillaris*.
Herringbone plant. See *Maranta leuconeura* 'Erythroneura'.
Hers's maple. See *Acer davidii* subsp.*grosseri*.
Hiba. See *Thujopsis dolabrata*.
Hickory. See *Carya*.
Hidden ginger. See *Curcuma*.
Highbush blueberry. See *Vaccinium corymbosum*.
Hill cherry. See *Prunus jamasakura*.
Himalayan birch. See *Betula utilis*.
Himalayan blue poppy. See *Meconopsis baileyi; Meconopsis grandis*.
Himalayan box. See *Buxus wallichiana*.
Himalayan honeysuckle. See *Leycesteria formosa*.
Himalayan lilac. See *Syringa emodi*.
Himalayan May apple. See *Sinopodophyllum hexandrum*.
Himalayan pine. See *Pinus wallichiana*.
Himalayan weeping juniper. See *Juniperus recurva*.
Hinoki cypress. See *Chamaecyparis obtusa*.
Hoary willow. See *Salix elaeagnos*.
Hognut. See *Carya glabra*.
Holford pine. See *Pinus* x *holfordiana*.
Holly. See Ilex.
Holly fern. See *Cyrtomium falcatum; Polystichum*.
Holly flame pea. See *Chorizema ilicifolium*.
Holly-fern woodsia. See *Woodsia polystichoides*.
Hollyhock. See *Alcea*.
Holm oak. See *Quercus ilex*.
Holy flax. See *Santolina rosmarinifolia*.
Honesty. See *Lunaria*.
Honey locust. See *Gleditsia triacanthos*.
Honeybush. See *Melianthus major*.
Honeysuckle. See *Lonicera*.
Honeywort. See *Cerinthe*.
Hoop-petticoat daffodil. See *Narcissus bulbocodium*.
Hop. See *Humulus lupulus* 'Aureus'.
Hop hornbeam. See *Ostrya carpinifolia*.
Hop tree. See *Ptelea trifoliata*.
Hornbeam. See *Carpinus*.
Hornbeam maple. See *Acer carpinifolium*.
Horned holly. See *Ilex cornuta*.
Horned rampion. See *Phyteuma*.
Horned poppy. See *Glaucium*.
Horned tulip. See *Tulipa acuminata*.
Horned violet. See *Viola cornuta*.
Hornwort. See *Ceratophyllum*.
Horse-chestnut. See *Aesculus*.
Horseshoe vetch. See *Hippocrepis*.
Hosta, White-backed. See *Hosta hypoleuca*.
Hot-waterplant. See *Achimenes*.
Hottentot fig. See *Carpobrotus edulis*.
Hound's tongue. See *Cynoglossum*.
Houseleek. See *Sempervivum*.
Hubei rowan. See *Sorbus glabriuscula*.
Huckleberry. See *Gaylussacia*.
Humble plant. See *Mimosa pudica*.
Hungarian oak. See *Quercus frainetto*.
Huntingdon elm. See *Ulmus* x *hollandica* 'Vegeta'.
Huntsman's cup. See *Sarracenia purpurea*.
Hupeh crab. See *Malus hupehensis*.
Hyacinth. See *Hyacinthus*.
Hyacinth bean. See *Lablab purpureus*.
Hyssop. See *Hyssopus*.

I

Ice-plant. See *Cleretum bellidiforme*.
Iceland poppy. See *Papaver croceum*.
Illawarra flame tree. See *Brachychiton acerifolius*.
Illawarra palm. See *Archontophoenix cunninghamiana*.
Immortelle. See *Bracteantha bracteata; Xeranthemum*.
Incense cedar. See *Calocedrus decurrens*.
Incense plant. See *Calomeria amaranthoides*.
Incense rose. See *Rosa primula*.
India rubber fig. See *Ficus elastica*.
India rubber tree. See *Ficus elastica*.
Indian almond. See *Terminalia catappa*.
Indian bean tree. See *Catalpa bignonioides*.
Indian corn. See *Zea*.
Indian currant. See *Symphoricarpos orbiculatus*.
Indian fig. See *Opuntia ficus-indica*.
Indian ginger. See *Alpinia calcarata*.
Indian hawthorn. See *Rhaphiolepis indica*.
Indian horse-chestnut. See *Aesculus indica*.
Indian laburnum. See *Cassia fistula*.
Indian pink. See *Dianthus chinensis*.
Indian plum. See *Oemleria cerasiformis*.
Indigo, False. See *Baptisia australis*.
Interrupted fern. See *Osmunda claytoniana*.
Ipomoea, Star. See *Ipomoea coccinea*.
Irish heath. See *Erica erigena*.
Irish ivy. See *Hedera hibernica*.
Irish tutsan. See *Hypericum pseudohenryi*.
Irish yew. See *Taxus baccata* 'Fastigiata'.
Iron cross begonia. See *Begonia masoniana*.
Ironbark. See *Eucalyptus*.
Ironwood. See *Ostrya virginiana*.
Italian alder. See *Alnus cordata*.
Italian bellflower. See *Campanula isophylla*.
Italian buckthorn. See *Rhamnus alaternus*.
Italian ivy. See *Hedera helix* f. *poetarum*.
Italian jasmine. See *Solanum seaforthianum*.
Italian maple. See *Acer opalus*.
Italian millet. See *Setaria macrostachya*.
Ivory bells. See *Campanula alliariifolia*.
Ivy. See *Hedera*.
Ivy of Uruguay. See *Cissus striata*.
Ivy-leaf peperomia. See *Peperomia griseoargentea*.
Ivy-leaved violet. See *Viola hederacea*.
Ivy-leaved toadflax. See *Cymbalaria muralis*.

J

Jack pine. See *Pinus banksiana*.
Jack-in-the-pulpit. See *Arisaema triphyllum*.
Jacob's coat. See *Acalypha wilkesiana*.
Jacob's ladder. See *Polemonium*.
Jacobean lily. See *Sprekelia formosissima*.
Jade plant, **Silver.** See *Crassula arborescens*.
Jade tree. See *Crassula ovata*.
Jade vine. See *Strongylodon macrobotrys*.
Japan pepper. See *Zanthoxylum piperitum*.
Japanese anemone. See *Anemone* x *hybrida*.
Japanese angelica tree. See *Aralia elata*.
Japanese apricot. See *Prunus mume*.
Japanese aralia. See *Fatsia japonica*.
Japanese arrowhead. See *Sagittaria sagittifolia* 'Flore Pleno'.
Japanese arrowroot. See *Pueraria montana* var. *lobata*.
Japanese banana. See *Musa basjoo*.
Japanese big-leaf magnolia. See *Magnolia obovata*.
Japanese bitter orange. See *Citrus trifoliata*.
Japanese black pine. See *Pinus thunbergii*.
Japanese cedar. See *Cryptomeria japonica*.
Japanese climbing fern. See *Lygodium japonicum*.
Japanese crab apple. See *Malus* x *floribunda*.
Japanese fatsia. See *Fatsia japonica*.
Japanese flag. See *Iris ensata*.
Japanese hemlock. See *Tsuga diversifolia; Tsuga sieboldii*.
Japanese holly. See *Ilex crenata*.
Japanese honeysuckle. See *Lonicera japonica*.
Japanese horse-chestnut. See *Aesculus turbinata*.
Japanese hydrangea vine. See *Schizophragma hydrangeoides*.
Japanese ivy. See *Hedera rhombea; Parthenocissus tricuspidata*.
Japanese lantern. See *Hibiscus schizopetalus*.
Japanese larch. See *Larix kaempferi*.
Japanese maple. See *Acer japonicum; Acer palmatum*.
Japanese mock orange. See *Pittosporum tobira*.
Japanese privet. See *Ligustrum japonicum*.
Japanese quince. See *Chaenomeles*.
Japanese red pine. See *Pinus densiflora*.
Japanese roof iris. See *Iris tectorum*.
Japanese rush. See *Acorus gramineus*.
Japanese sago palm. See *Cycas revoluta*.
Japanese shield fern. See *Dryopteris erythrosora*.
Japanese snowball tree. See *Viburnum plicatum*.
Japanese spikenard. See *Aralia cordata*.
Japanese spindle. See *Euonymus japonicus*.
Japanese tassel fern. See *Polystichum polyblepharum*.
Japanese umbrella plant. See *Sciadopitys verticillata*.
Japanese walnut. See *Juglans ailantifolia*.
Japanese white pine. See *Pinus parviflora*.
Japanese wisteria. See *Wisteria floribunda*.
Japanese witch hazel. See *Hamamelis japonica*.
Japanese yew. See *Taxus cuspidata*.
Japonica. See *Chaenomeles*.
Jasmine. See *Jasminum*.
Jeffrey pine. See *Pinus jeffreyi*.
Jersey elm. See *Ulmus minor* 'Sarniensis'.
Jerusalem cherry. See *Solanum pseudocapsicum*.
Jerusalem cross. See *Lychnis chalcedonica*.
Jerusalem sage. See *Phlomis fruticosa; Pulmonaria saccharata*.
Jerusalem thorn. See *Paliurus spina-christi; Parkinsonia aculeata*.
Jessamine. See *Jasminum officinale*.
Jesuit's nut. See *Trapa natans*.
Job's tears. See *Coix lacryma-jobi*.
Joe Pye weed. See *Eupatorium maculatum*.
Jonquil. See *Narcissus jonquilla*.
Joseph's coat. See *Alternanthera dentata* 'Purple Knight'.
Josephine's lily. See *Brunsvigia josephinae*.
Judas tree. See *Cercis*.
Juneberry. See *Amelanchier*.
Jungle brake. See *Pteris umbrosa*.
Juniper. See *Juniperus*.

K

Kaffir fig. See *Carpobrotus edulis*.
Kalili ginger. See *Hedychium gardnerianum*.
Kangaroo paw. See *Anigozanthos*.
Kangaroo vine. See *Cissus antarctica*.
Kansas gay feather. See *Liatris pycnostachya*.
Kapok. See *Ceiba pentandra*.
Kashmir cypress. See *Cupressus cashmeriana*.
Katsura. See *Cercidiphyllum japonicum*.
Kenilworth ivy. See *Cymbalaria muralis*.
Kentucky coffee tree. See *Gymnocladus dioica*.
Kermes oak. See *Quercus coccifera*.
Kerosene bush. See *Ozothamnus ledifolius*.
Kilmarnock willow. See *Salix caprea* 'Kilmarnock'.
King of the bromeliads. See *Vriesea hieroglyphica*.
King palm. See *Archontophoenix*.
King protea. See *Protea cynaroides*.
King William pine. See *Athrotaxis selaginoides*.
King's crown. See *Justicia carnea*.
Kingcup. See *Caltha palustris*.
Kingfisher daisy. See *Felicia bergeriana*.
Kiwi fruit. See *Actinidia deliciosa*.
Klapperbos. See *Nymania capensis*.
Knapweed. See *Centaurea*.
Knotweed. See *Persicaria*.
Korean fir. See *Abies koreana*.
Korean forsythia. See *Forsythia ovata*.
Korean mountain ash. See *Sorbus alnifolia*.
Korean thuja. See *Thuja koraiensis*.

Kowhai. See *Sophora*.
Kudzu vine. See *Pueraria montana* var. *lobata*.
Kurrajong. See *Brachychiton populneus*.
Kusamaki. See *Podocarpus macrophyllus*.

L

Lablab. See *Lablab purpureus*.
Labrador tea. See *Rhododendron groenlandicum*.
Lace aralia. See *Polyscias guilfoylei* 'Victoriae'.
Lace flower. See *Episcia dianthiflora*.
Lace-bark. See *Hoheria populnea*.
Lace-bark pine. See *Pinus bungeana*.
Lacquered wine-cup. See *Aechmea* Foster's Favorite Group.
Lad's love. See *Artemisia abrotanum*.
Ladder fern. See *Nephrolepis cordifolia*.
Lady fern. See *Athyrium filix-femina*.
Lady tulip. See *Tulipa clusiana*.
Lady-of-the-night. See *Brassavola nodosa*.
Lady's mantle. See *Alchemilla*.
Lady's slipper orchid. See *Cypripedium calceolus*.
Lady's smock. See *Cardamine pratensis*.
Lamb's tongue. See *Stachys byzantina*.
Lamb's-tail cactus. See *Echinocereus schmollii*.
Lancewood. See *Pseudopanax crassifolius*.
Lantern tree. See *Crinodendron hookerianum*.
Large self-heal. See *Prunella grandiflora*.
Large yellow restharrow. See *Ononis natrix*.
Large-leaved lime. See *Tilia platyphyllos*.
Larkspur. See *Consolida*.
Late Dutch honeysuckle. See *Lonicera periclymenum* 'Serotina'.
Late spider orchid. See *Ophrys fuciflora*.
Laurel. See *Laurus; Prunus laurocerasus; Prunus lusitanica*.
Laurustinus. See *Viburnum tinus*.
Lavandin. See *Lavandula* x *intermedia*.
Lavender. See *Lavandula*.
Lavender cotton. See *Santolina chamaecyparissus*.
Lawn chamomile. See *Chamaemelum nobile*.
Lawson cypress. See *Chamaecyparis lawsoniana*.
Lead plant. See *Amorpha canescens*.
Leadwort, Cape. See *Plumbago auriculata*.
Least duckweed. See *Wolffia arrhiza*.
Least snowbell. See *Soldanella minima*.
Leatherleaf. See *Chamaedaphne calyculata*.
Leatherleaf sedge. See *Carex buchananii*.
Lemon mint. See *Mentha* x *piperita* f. *citrata*.
Lemon verbena. See *Aloysia triphylla*.
Lemon vine. See *Pereskia aculeata*.
Lenten rose. See *Helleborus orientalis*.
Lent lily. See *Narcissus pseudonarcissus*.
Leopard lily. See *Iris domestica*
Leopard plant. See *Farfugium japonicum* 'Aureomaculatum'.
Leopard's bane. See *Doronicum*.
Lesser celandine. See *Ficaria*.
Lesser periwinkle. See *Vinca minor*.
Lettuce, Water. See *Pistia stratiotes*.
Lijiang spruce. See *Picea likiangensis*.
Lilac. See *Syringa*.
Lilac fuchsia. See *Fuchsia arborescens*.
Lily. See *Lilium*.
Lily of Japan, Golden-rayed. See *Lilium auratum*.
Lily tree. See *Magnolia denudata*.
Lily-of-the-valley. See *Convallaria*.
Lilyturf. See *Liriope*.
Lime. See *Tilia*.
Linden. See *Tilia*.
Ling. See *Calluna*.
Lion's ear. See *Leonotis leonurus*.
Lip fern. See *Cheilanthes*.
Lipstick plant. See *Aeschynanthus pulcher*.
Liquorice. See *Glycyrrhiza glabra*.
Liquorice fern. See *Polypodium glycyrrhiza*.
Living baseball. See *Euphorbia obesa*.
Living rock. See *Ariocarpus; Pleiospilos*.
Living stones. See *Lithops*.
Livingstone daisy. See *Cleretum bellidiforme*.
Lobel's maple. See *Acer cappadocicum* subsp. *lobelii*.
Lobster cactus. See *Schlumbergera truncata*.
Locust. See *Robinia pseudoacacia*.
Lodgepole pine. See *Pinus contorta* var. *latifolia*.
Lollipop plant. See *Pachystachys lutea*.
Lombardy poplar. See *Populus nigra* 'Italica'.
London plane. See *Platanus* x *hispanica*.
London pride. See *Saxifraga* x *urbium*.
Loosestrife. See *Lysimachia*.
Loquat. See *Eriobotrya japonica*.
Lord Anson's blue pea. See *Lathyrus nervosus*.
Lords and ladies. See *Arum*.
Lorraine begonia. See *Begonia* 'Gloire de Lorraine'.
Love grass. See *Eragrostis*.
Love-in-a-mist. See *Nigella damascena*.
Love-in-a-puff. See *Cardiospermum halicacabum*.
Love-lies-bleeding. See *Amaranthus caudatus*.
Low-bush blueberry. See *Vaccinium angustifolium* var. *laevifolium*.
Lucombe oak. See *Quercus* x *crenata* 'Lucombeana'.
Lungwort. See *Pulmonaria*.
Lupin. See *Lupinus*.
Lyme grass. See *Leymus arenarius*.

M

Macadamia nut. See *Macadamia integrifolia*.
Macedonian pine. See *Pinus euce*.
Mace sedge. See *Carex grayi*.
Mackay's heath. See *Erica mackayana*.
Madagascar dragon tree. See *Dracaena marginata*.
Madagascar jasmine. See *Stephanotis floribunda*.
Madeira vine. See *Anredera*.
Madonna lily. See *Lilium candidum*.
Madroña. See *Arbutus menziesii*.
Mahoe. See *Melicytus ramiflorus; Thespesia populnea*.
Maiden pink. See *Dianthus deltoides*.
Maidenhair fern. See *Adiantum capillus-veneris*.
Maidenhair spleenwort. See *Asplenium trichomanes*.
Maidenhair tree. See *Ginkgo biloba*
Maiten. See *Maytenus boaria*.
Maize. See *Zea*.
Majorcan peony. See *Paeonia cambessedesii*.
Malay ginger. See *Costus speciosus*.
Male fern. See *Dryopteris filix-mas*.
Mallow. See *Malva*.
Maltese cross. See *Lychnis chalcedonica*.
Mamaku. See *Cyathea medullaris*.
Manchurian cherry. See *Prunus maackii*.
Manchurian crab apple. See *Malus baccata* var. *mandschurica*.
Mandarin's hat plant. See *Holmskioldia sanguinea*.
Manipur lily. See *Lilium mackliniae*.
Manna ash. See *Fraxinus ornus*.
Manna gum. See *Eucalyptus viminalis*.
Manuka. See *Leptospermum scoparium*.
Manzanita. See *Arctostaphylos*.
Maple. See *Acer*.
Mapleleaf begonia. See *Begonia dregei; Begonia* 'Weltoniensis'.
Marguerite. See *Argyranthemum frutescens*.
Marigold. See *Calendula*. .
Mariposa tulip. See *Calochortus*.
Mariposa, Yellow. See *Calochortus luteus*.
Maritime pine. See *Pinus pinaster*.
Marjoram, Wild. See *Origanum vulgare*.
Marmalade bush. See *Streptosolen jamesonii*.
Marsh bucklerfern. See *Thelypteris palustris*.
Marsh fern. See *Thelypteris palustris*.
Marsh marigold. See *Caltha*.
Martagon lily. See *Lilium martagon*.
Marvel of Peru. See *Mirabilis jalapa*.
Mask flower. See *Alonsoa warscewiczii*.
Masterwort. See *Astrantia*.
Mastic tree. See *Pistacia lentiscus*.
Maule's quince. See *Chaenomeles japonica*.
May. See *Crataegus laevigata*.
May apple. See *Podophyllum peltatum*.
May lily. See *Maianthemum*.
Mayflower. See *Epigaea repens*.
Meadow buttercup. See *Ranunculus acris*.
Meadow cranesbill. See *Geranium pratense*.
Meadow foam. See *Limnanthes douglasii*.
Meadow lily. See *Lilium canadense*.
Meadow phlox. See *Phlox maculata*.
Meadow rue. See *Thalictrum*.
Meadow saffron. See *Colchicum autumnale*.
Meadow saxifrage. See *Saxifraga granulata*.
Meadowsweet. See *Filipendula ulmaria*.
Medick. See *Medicago*.
Mediterranean heath. See *Erica erigena*.
Medlar. See *Mespilus*.
Melick. See *Melica*.
Melon cactus. See *Melocactus intortus*.
Merrybells. See *Uvularia grandiflora*.
Mescal button. See *Lophophora williamsii*.
Metake. See *Pseudosasa japonica*.
Metal-leaf begonia. See *Begonia metallica*.
Mexican blood flower. See *Distictis buccinatoria*.
Mexican bush sage. See *Salvia leucantha*.
Mexican cypress. See *Cupressus lusitanica*.
Mexican firecracker. See *Echeveria setosa*.
Mexican flame bush. See *Calliandra tweediei*.
Mexican flame leaf. See *Euphorbia pulcherrima*.
Mexican flame vine. See *Pseudogynoxys chenopodioides*.
Mexican foxglove. See *Tetranema roseum*.
Mexican giant hyssop. See *Agastache*.
Mexican hat plant. See *Kalanchoe daigremontiana*.
Mexican lily. See *Hippeastrum reginae*.
Mexican orange blossom. See *Choisya*.
Mexican palo verde. See *Parkinsonia aculeata*.
Mexican stone pine. See *Pinus cembroides*.
Mexican sunflower. See *Tithonia rotundifolia*.
Mexican tulip poppy. See *Hunnemannia fumariifolia*.
Mexican violet. See *Tetranema roseum*.
Mezereon. See *Daphne mezereum*.
Michaelmas daisy. See *Aster; Symphyotrichum*.
Mickey-mouse plant. See *Ochna serrulata*.
Mignonette. See *Reseda*.
Mignonette vine. See *Anredera*.
Mile-a-minute plant. See *Fallopia aubertii; Fallopia baldschuanica*.
Milfoil. See *Myriophyllum*.
Milfoil, Whorled water. See *Myriophyllum verticillatum*.
Milkweed. See *Euphorbia*.
Milkwort. See *Polygala*.
Mimicry plant. See *Pleiospilos bolusii*.
Mimosa. See *Acacia*.
Mind-your-own-business. See *Soleirolia*.
Miniature date palm. See *Phoenix roebelenii*.
Mint. See *Mentha*.
Mint bush. See *Elsholtzia stauntonii; Prostanthera*.
Mint-bush, Round-leaved. See *Prostanthera rotundifolia*.
Mintleaf. See *Plectranthus madagascariensis*.
Mirbeck's oak. See *Quercus canariensis*.
Mirror orchid. See *Ophrys speculum*.
Miss Willmott's ghost. See *Eryngium giganteum*.
Missouri flag. See *Iris missouriensis*.
Mist flower. See *Eupatorium rugosum*.
Mistletoe cactus. See *Rhipsalis*.
Mistletoe fig. See *Ficus deltoidea*.
Mitrewort. See *Mitella*.
Moccasin flower. See *Cypripedium acaule*.
Mock orange. See *Philadelphus coronarius*.
Monarch birch. See *Betula maximowicziana*.
Monarch-of-the-East. See *Sauromatum venosum*.
Money tree. See *Crassula ovata*.
Moneywort. See *Lysimachia nummularia*.
Mongolian lime. See *Tilia mongolica*.
Monkey flower. See *Diplacus; Mimulus*
Monkey musk. See *Mimulus luteus*.
Monkey puzzle. See *Araucaria araucana*.
Monkshood. See *Aconitum*.
Montbretia. See *Crocosmia*.
Monterey ceanothus. See *Ceanothus rigidus* var. *ridigus*.
Monterey cypress. See *Cupressus macrocarpa*.
Monterey pine. See *Pinus radiata*.
Montpelier maple. See *Acer monspessulanum*.
Montpellier rock rose. See *Cistus monspeliensis*.
Moon flower. See *Ipomoea alba*.
Moon trefoil. See *Medicago arborea*.
Moonlight holly. See *Ilex aquifolium* 'Flavescens'.
Moonseed. See *Menispermum*.
Moonstones. See *Pachyphytum oviferum*.
Moreton Bay chestnut. See *Castanospermum australe*.
Moreton Bay fig. See *Ficus macrophylla*.
Morinda spruce. See *Picea smithiana*.
Moroccan broom. See *Argyrocytisus battandieri*.
Moroccan mint. See *Mentha spicata* 'Moroccan'.
Moses-in-the-cradle. See *Tradescantia spathacea*.
Mosquito grass. See *Bouteloua gracilis*.
Moss campion. See *Silene acaulis*.
Moss phlox. See *Phlox subulata*.
Mother of thousands. See *Saxifraga stolonifera; Soleirolia*.
Mother spleenwort. See *Asplenium bulbiferum*.
Mother-in-law's seat. See *Echinocactus grusonii*.
Mother-in-law's tongue. See *Sansevieria trifasciata*.
Mother-of-pearl plant. See *Graptopetalum paraguayense*.
Mount Etna broom. See *Genista aetnensis*.
Mount Morgan wattle. See *Acacia podalyriifolia*.
Mount Wellington peppermint. See *Eucalyptus coccifera*.
Mountain ash. See *Sorbus aucuparia*.
Mountain avens. See *Dryas*.
Mountain dogwood. See *Cornus nuttallii*.
Mountain flax. See *Phormium cookianum*.
Mountain gum. See *Eucalyptus dalrympleana*.
Mountain hakea. See *Hakea lissosperma*.
Mountain hemlock. See *Tsuga mertensiana*.
Mountain holly. See *Olearia ilicifolia*.
Mountain pansy. See *Viola lutea*.
Mountain pepper. See *Tasmannia lanceolata*.
Mountain pine. See *Pinus mugo*.
Mountain pride. See *Penstemon newberryi*.
Mountain sow thistle. See *Cicerbita alpina*.
Mountain spruce. See *Picea engelmannii*.
Mountain tassel. See *Soldanella montana*.
Mountain willow. See *Salix arbuscula*.
Mourning iris. See *Iris susiana*.
Mourning widow. See *Geranium phaeum*.
Mouse plant. See *Arisarum proboscideum*.
Mouse-ear, Alpine. See *Cerastium alpinum*.
Moutan. See *Paeonia suffruticosa*.
Mrs. Robb's bonnet. See *Euphorbia amygdaloides* var. *robbiae*.
Mrs. Wilmott's ghost. See *Eryngium giganteum*.
Mugwort, White. See *Artemisia lactiflora*.
Mulberry. See *Morus*.
Mullein. See *Verbascum*.
Musk. See *Mimulus*.
Musk mallow. See *Malva moschata*.
Musk willow. See *Salix aegyptiaca*.
Myrobalan. See *Prunus cerasifera*.
Myrtle. See *Myrtus*.

N

Naked coral tree. See *Erythrina americana*.
Nankeen lily. See *Lilium* x *testaceum*.
Narihira bamboo. See *Semiarundinaria fastuosa*.
Narrow buckler fern. See *Dryopteris carthusiana*.
Narrow-leaved ash. See *Fraxinus angustifolia*.
Nasturtium. See *Tropaeolum*.
Natal bottlebrush. See *Greyia sutherlandii*.
Natal grass. See *Melinis repens*.
Natal ivy. See *Senecio macroglossus*.
Natal plum. See *Carissa macrocarpa*.
Navelwort, Venus's. See *Omphalodes linifolia*.
Needle spike-rush. See *Eleocharis acicularis*.
Nepal ivy. See *Hedera nepalensis*.
Nerve plant. See *Fittonia*.
Net bush. See *Calothamnus*
Net-veined willow. See *Salix reticulata*.
Nettle-leaved bellflower. See *Campanula trachelium*.
New Guinea creeper. See *Mucuna bennettii*.
New Zealand bluebell. See *Wahlenbergia albomarginata*.
New Zealand cabbage palm. See *Cordyline australis*.
New Zealand daisy. See *Celmisia*.
New Zealand edelweiss. See *Leucogenes*.
New Zealand fire tree. See *Metrosideros excelsa*.
New Zealand flax. See *Phormium*.
New Zealand honeysuckle. See *Knightia excelsa*.
New Zealand satin flower. See *Libertia grandiflora*.
New Zealand tea-tree. See *Leptospermum scoparium*.
Ngaio. See *Myoporum laetum*.
Night-blooming cereus. See *Hylocereus undatus*.
Night-scented stock. See *Matthiola longipetala* subsp. *bicornis*.
Nikko fir. See *Abies homolepis*.
Nikko maple. See *Acer maximowiczianum*.
Nine-pin heath. See *Erica mammosa*.
Ninebark. See *Physocarpus opulifolius*.
Nirre. See *Nothofagus antarctica*.
Noble bamboo. See *Himalayacalamus falconeri*.
Noble fir. See *Abies procera*.
Nodding catchfly. See *Silene pendula*.
Nootka cypress. See *Xanthocyparis nootkatensis*.
Norfolk Island hibiscus. See *Lagunaria patersonii*.
North Island edelweiss. See *Leucogenes leontopodium*.
Northern bungalow palm. See *Archontophoenix alexandrae*.
Northern Japanese hemlock. See *Tsuga diversifolia*.
Northern maidenhair fern. See *Adiantum pedatum*.
Northern pitch pine. See *Pinus rigida*.
Northern rata. See *Metrosideros robusta*.
Norway maple. See *Acer platanoides*.
Norway spruce. See *Picea abies*.

O

Oak. See *Quercus*.
Oak fern. See *Gymnocarpium dryopteris*.
Oak-leaved hydrangea. See *Hydrangea quercifolia*.
Obedient plant. See *Physostegia*.
Ocean spray. See *Holodiscus discolor*.
Oconee bells. See *Shortia galacifolia*.
Ohio buckeye. See *Aesculus glabra*.
Old lady cactus. See *Mammillaria hahniana*.
Old man. See *Artemisia abrotanum*.
Old man of the Andes. See *Oreocereus celsianus*.
Old man's beard. See *Clematis*.
Old pink moss rose. See *Rosa* x *centifolia* 'Muscosa'.
Old-man cactus. See *Cephalocereus senilis*
Old-witch grass. See *Panicum capillare*.
Oleander leaf protea. See *Protea neriifolia*.
Oleaster. See *Elaeagnus angustifolia*.
Olive. See *Olea europaea*.
Oliveranthus elegans. See *Echeveria harmsii*.
One-leaved ash. See *Fraxinus* f. *diversifolia*.
Onion. See *Allium*.
Ontario poplar. See *Populus* x *jackii*.
Opium poppy. See *Papaver somniferum*.
Orange jasmine. See *Murraya paniculata*.
Orange lily. See *Lilium bulbiferum*.
Orchard grass. See *Dactylis glomerata*.
Orchid cactus. See *Epiphyllum*.
Oregon grape. See *Mahonia aquifolium*.
Oregon maple. See *Acer macrophyllum*.
Oregon plum. See *Oemleria cerasiformis*.
Organ-pipe cactus. See *Pachycereus marginatus*.
Oriental beech. See *Fagus orientalis*.
Oriental bittersweet. See *Celastrus orbiculatus*.
Oriental plane. See *Platanus orientalis*.
Oriental poppy. See *Papaver orientale*.
Oriental spruce. See *Picea orientalis*.
Oriental sweet gum. See *Liquidambar orientalis*.
Oriental thuja. See *Platycladus*.
Ornamental cabbage. See *Brassica oleracea* forms.
Ornamental kale. See *Brassica* Northern Lights.
Ornamental maize. See *Zea mays*.
Ornamental pepper. See *Capsicum annuum*.
Ornamental yam. See *Dioscorea discolor*.
Orris root. See *Iris germanica* 'Florentina'.
Oso berry. See *Oemleria cerasiformis*.
Ostrich fern. See *Matteuccia struthiopteris*.
Ostrich-feather fern. See *Matteuccia struthiopteris*.
Oswego tea. See *Monarda didyma*.
Our Lord's candle. See *Hesperoyucca whipplei*.
Ovens wattle. See *Acacia pravissima*.
Owl's eyes. See *Huernia zebrina*.
Ox eye. See *Heliopsis*.
Ox-eye, Yellow. See *Buphthalmum salicifolium*.
Oxlip. See *Primula elatior*.

PQ

Pacific dogwood. See *Cornus nuttallii*.
Pacific fir. See *Abies amabilis*.
Pagoda tree. See *Plumeria; Styphnolobium japonicum*.
Paintbrush. See *Haemanthus albiflos*.
Painted fern. See *Athyrium niponicum*.
Painted net leaf. See *Fittonia*.
Painted nettle. See *Solenostemon*.
Painted trillium. See *Trillium undulatum*.
Painted wood lily. See *Trillium undulatum*.
Palm Springs daisy. See *Cladanthus*.
Palm-leaf begonia. See *Begonia luxurians*.
Pampas grass. See *Cortaderia selloana*.
Panda plant. See *Kalanchoe tomentosa*.
Pansy. See *Viola* x *wittrockiana*.
Pansy orchid. See *Miltoniopsis*.
Panther lily. See *Lilium pardalinum*.
Paper birch. See *Betula papyifera*.
Paper bush. See *Edgeworthia*.
Paper mulberry. See *Broussonetia papyrifera*.
Paper reed. See *Cyperus papyrus*.
Paper-bark maple. See *Acer griseum*.
Paper-bark tree. See *Melaleuca viridiflora* var. *rubriflora*.
Paper-bark, Scented. See *Melaleuca squarrosa*.
Paperbark. See *Melaleuca*.
Papyrus. See *Cyperus papyrus*.
Para para. See *Pisonia umbellifera*.
Parachute plant. See *Ceropegia sandersonii*.
Paradise lily. See *Paradisea*.
Paradise palm. See *Howea forsteriana*.
Parasol tree, Chinese. See *Firmiana simplex*.
Parlour palm. See *Chamaedorea elegans*.
Parrot leaf. See *Alternanthera ficoidea*.
Parrot's bill. See *Clianthus puniceus*.
Parrot's flower. See *Heliconia psittacorum*.
Parrot's plantain. See *Heliconia psittacorum*.
Parsley fern. See *Cryptogramma crispa*.
Partridge berry. See *Mitchella*.
Pasque flower. See *Pulsatilla vulgaris*.
Passion flower. See *Passiflora*.
Passion fruit, Banana. See *Passiflora antioquiensis*.
Patagonian cypress. See *Fitzroya cupressoides*.
Pawpaw. See *Asimina triloba*.
Pea tree. See *Caragana arborescens*.
Peace lily. See *Spathiphyllum wallisii*.
Peach. See *Prunus persica*.
Peacock flower. See *Tigridia pavonia*.
Peacock plant. See *Goeppertia makoyana*.
Peanut cactus. See *Echinopsis chamaecereus*.
Pear. See *Pyrus*.
Pearl berry. See *Margyricarpus pinnatus*.
Pearl bush. See *Exochorda*.
Pearl everlasting. See *Anaphalis*.
Pearl millet. See *Pennisetum glaucum* 'Purple Majesty'.
Pedunculate oak. See *Quercus robur*.
Pelican flower. See *Aristolochia grandiflora*.
Pencil cedar. See *Juniperus virginiana*.
Pendent silver lime. See *Tilia tomentosa* 'Petiolaris'.
Pendulous sedge. See *Carex pendula*.
Penny-cress, Alpine. See *Thlaspi alpinum*.
Peony. See *Paeonia*.
Pepper. See *Capsicum*.
Pepper face. See *Peperomia obtusifolia*.
Pepper, mountain. See *Drimys lanceolata*.
Pepper-bush, Sweet. See *Clethra alnifolia*.
Pepper-tree. See *Pseudowintera axillaris*.
Peppermint geranium. See *Pelargonium tomentosum*.
Peppermint tree. See *Agonis flexuosa*.
Père David's maple. See *Acer davidii*.
Perennial pea. See *Lathyrus latifolius; Lathyrus sylvestris*.
Periwinkle. See *Vinca*.
Perry's weeping silver holly. See *Ilex aquifolium* 'Argentea Marginata Pendula'.
Persian buttercup. See *Ranunculus asiaticus*.
Persian everlasting pea. See *Lathyrus rotundifolius*.
Persian ironwood. See *Parrotia persica*.
Persian ivy. See *Hedera colchica*.
Persian lilac. See *Melia azedarach; Syringa* x *persica*.
Persian stone cress. See *Aethionema grandiflorum*.
Persian violet. See *Exacum affine*.
Peruvian daffodil. See *Ismene narcissiflora*.
Peruvian old-man cactus. See *Espostoa lanata*.
Peyote. See *Lophophora*.
Pheasant's eye. See *Narcissus poeticus* var. *recurvus*.
Pheasant's tail grass. See *Anemanthele lessoniana*.
Philippine violet. See *Barleria cristata*.
Philodendron, Blushing. See *Philodendron erubescens*.
Piccabeen palm. See *Archontophoenix cunninghamiana*.
Pick-a-back plant. See *Tolmiea menziesii*.
Pickerel weed. See *Pontederia cordata*.
Pigeon berry. See *Duranta erecta*.
Pignut. See *Carya glabra*.
Pignut hickory. See *Carya glabra*.
Pilewort. See *Ficaria verna*.
Pin cherry. See *Prunus pensylvanica*.
Pin oak. See *Quercus palustris*.
Pine. See *Pinus*.
Pine-mat manzanita. See *Arctostaphylos nevadensis*.
Pineapple. See *Ananas*.
Pineapple broom. See *Argyrocytisus battandieri*.
Pineapple flower. See *Eucomis*.
Pineapple guava. See *Acca sellowiana*.
Pineapple lily. See *Eucomis*.
Pink. See *Dianthus*.
Pink arum. See *Zantedeschia rehmannii*.
Pink banana. See *Musa velutina*.
Pink broom. See *Carmichaelia carmichaeliae*.
Pink dandelion. See *Crepis incana*.
Pink snowball. See *Dombeya* x *cayeuxii*.
Pink trumpet tree. See *Tabebuia rosea*.
Pinwheel. See *Aeonium haworthii*.
Pinyon. See *Pinus cembroides*.
Pistachio. See *Pistacia*.
Pitch apple. See *Clusia rosea*.
Pitcherplant. See *Nepenthes; Sarracenia*.
Pittosporum, Japanese. See *Pittosporum tobira*.
Plane. See *Platanus*.
Plantain. See *Musa*.
Plantain lily. See *Hosta*.
Plum yew. See *Cephalotaxus; Prumnopitys andina*.
Plum-fruited yew. See *Prumnopitys andina*.
Plume poppy. See *Macleaya cordata*.
Plumed tussock grass. See *Chionochloa conspicua*.
Plush plant. See *Echeveria pulvinata*.
Poached-egg flower. See *Limnanthes douglasii*.
Pocket handkerchief tree. See *Davidia involucrata*.
Poet's daffodil. See *Narcissus poeticus*.
Poet's ivy. See *Hedera helix* f. *poetarum*.
Pohutakawa. See *Metrosideros*.
Poinsettia. See *Euphorbia pulcherrima*.
Pokeweed, Virginian. See *Phytolacca americana*.
Polka dot plant. See *Hypoestes*.
Polyanthus. See *Primula Pacific Series*.
Polyanthus daffodil. See *Narcissus tazetta*.
Polypody. See *Polypodium vulgare*.
Pomegranate. See *Punica*.
Pontine oak. See *Quercus pontica*.
Pony-tail. See *Beaucarnea recurvata*.
Poorman's orchid. See *Schizanthus*.
Poplar. See *Populus*.
Poppy. See *Papaver*.
Port Jackson fig. See *Ficus rubiginosa*.
Portia oil nut. See *Thespesia populnea*.
Portugal laurel. See *Prunus lusitanica*.
Portuguese heath. See *Erica lusitanica*.
Pot marigold. See *Calendula officinalis*.
Potato creeper. See *Solanum seaforthianum*.
Potato vine. See *Solanum laxum*.
Pouch flower. See *Calceolaria*.
Powder-puff tree. See *Calliandra*.
Prayer peperomia. See *Peperomia dolabriformis*.
Prayer plant. See *Maranta leuconeura*.
Prickly Moses. See *Acacia verticillata*.
Prickly pear. See *Opuntia*.
Prickly poppy. See *Argemone mexicana*.
Prickly shield fern. See *Polystichum aculeatum*.
Pride of Bolivia. See *Tipuana tipu*.
Pride of Madeira. See *Echium candicans*.
Primrose. See *Primula*.
Primrose jasmine. See *Jasminum mesnyi*.
Primrose peerless. See *Narcissus* x *medioluteus*.
Primula, Drumstick. See *Primula denticulata*.
Prince Albert's yew. See *Saxegothaea conspicua*.
Prince of Wales heath. See *Erica perspicua*.
Prince's feather. See *Amaranthus hypochondriacus*.
Princess tree. See *Paulownia tomentosa*.
Privet. See *Ligustrum*.
Prophet flower. See *Arnebia pulchra*.
Prostrate coleus. See *Plectranthus oertendahlii*.
Prostrate speedwell. See *Veronica prostrata*.
Pudding pipe-tree. See *Cassia fistula*.
Puka. See *Meryta sinclairii*.
Pukapuka. See *Brachyglottis repanda*.
Purple anise. See *Illicium floridanum*.
Purple broom. See *Chamaecytisus purpureus*.
Purple coral pea. See *Hardenbergia violacea*.
Purple crab. See *Malus* x *purpurea*.
Purple loosestrife. See *Lythrum*.
Purple mountain saxifrage. See *Saxifraga oppositifolia*.
Purple osier. See *Salix purpurea*.
Purple rock brake. See *Pellaea atropurpurea*.
Purple shield. See *Strobilanthes dyeriana*.
Purple toadflax. See *Linaria purpurea*.
Purple wreath. See *Petrea volubilis*.
Purple-leaved ivy. See *Hedera helix* 'Atropurpurea'.
Purple-stemmed cliff brake. See *Pellaea atropurpurea*.
Purslane. See *Portulaca*.
Pussy ears. See *Cyanotis somaliensis; Kalanchoe tomentosa*.
Pussy willow. See *Salix caprea*.
Pygmy date palm. See *Phoenix roebelenii*.
Pyramidal bugle. See *Ajuga pyramidalis*.
Pyrenean dead nettle. See *Horminum pyrenaicum*.
Quaking grass. See *Briza*.
Quamash. See *Camassia quamash*.
Quassia. See *Picrasma quassoides*.
Quater. See *Vinca major*.
Queen Anne's double daffodil. See *Narcissus* 'Eystettensis'.
Queen Anne's jonquil. See *Narcissus jonquilla* 'Flore Pleno'.
Queen Anne's thimbles. See *Gilia capitata*.
Queen palm. See *Syagrus romanzoffiana*.
Queen-of-the-night. See *Selenicereus grandiflorus*.
Queen's tears. See *Billbergia nutans*.
Queen's wreath. See *Petrea volubilis*.
Queencup. See *Clintonia uniflora*.
Queensland nut. See *Macadamia integrifolia*.
Queensland pyramidal tree. See *Lagunaria patersonii*.
Queensland silver wattle. See *Acacia podalyriifolia*.
Queiró. See *Daboecia azorica*.
Quince. See *Cydonia oblonga*.

R

Rabbit's tracks. See *Maranta leuconeura* 'Kerchoveana'.
Rain daisy. See *Dimorphotheca pluvialis*.
Rain lily. See *Zephyranthes*.
Rainbow star. See *Cryptanthus bromeliodes*.
Raisin-tree. See *Hovenia dulcis*.
Ram's horn. See *Proboscidea louisianica*.
Rangiora. See *Brachyglottis repanda*.
Rangoon creeper. See *Combretum indicum*.
Raspberry, Flowering. See *Rubus odoratus*.
Rata. See *Metrosideros*.
Rat's tail cactus. See *Disocactus flagelliformis*.
Rauli. See *Nothofagus alpina*.
Red baneberry. See *Actaea rubra*.
Red chokeberry. See *Aronia arbutifolia*.
Red ginger lily. See *Hedychium coccineum*.
Red horse-chestnut. See *Aesculus* x *carnea*.
Red maple. See *Acer rubrum*.
Red morning glory. See *Ipomoea coccinea*.
Red mountain spinach. See *Atriplex hortensis* var. *rubra*.
Red oak. See *Quercus rubra*.
Red orach. See *Atriplex hortensis* var. *rubra*.
Red orchid cactus. See *Nopalxochia ackermannii*.
Red osier dogwood. See *Cornus sericea*.
Red passion flower. See *Passiflora coccinea; Passiflora racemosa*.
Red pineapple. See *Ananas bracteatus*.
Red river gum. See *Eucalyptus camaldulensis*.
Red rose of Lancaster. See *Rosa gallica* var. *officinalis*.
Red spider lily. See *Lycoris radiata*.
Red valerian. See *Centranthus ruber*.
Red-and-green kangaroo paw. See *Anigozanthos manglesii*.
Red-barked dogwood. See *Cornus alba*.
Red-berried elder. See *Sambucus racemosa*.
Red-hot cat's tail. See *Acalypha hispida*.
Red-hot poker. See *Kniphofia; K. uvaria*.
Red-ink plant. See *Phytolacca americana*.
Red-leaf philodendron. See *Philodendron erubescens*.
Red-twigged lime. See *Tilia platyphyllos*.
Redbird flower. See *Euphorbia tithymaloides* 'Variegata'.
Redbud. See *Cercis*.
Redwood. See *Sequoia sempervirens*.
Reed grass. See *Calamagrostis*.
Reflexed stonecrop. See *Sedum rupestre*.
Regal lily. See *Lilium regale*.
Restharrow. See *Ononis*.
Resurrection lily. See *Lycoris squamigera*.
Resurrection plant. See *Selaginella lepidophylla*.
Rewa rewa. See *Knightia excelsa*.
Rhubarb. See *Rheum*.
Ribbon bush. See *Hypoestes aristata*.
Ribbon gum. See *Eucalyptus viminalis*.
Ribbon plant. See *Chlorophytum comosum*.
Ribbonwood. See *Hoheria sexstylosa*.
Rice-paperplant. See *Tetrapanax papyrifer*.
Rienga lily. See *Arthropodium cirratum*.
River birch. See *Betula nigra*.
Roast-beef plant. See *Iris foetidissima*.
Roblé. See *Nothofagus obliqua*.
Rock lily. See *Arthropodium cirratum*.
Rock rose. See *Cistus*.
Rock speedwell. See *Veronica fruticans*.
Rock spiraea. See *Petrophytum*.
Rocky Mountain columbine. See *Aquilegia coerulea*.
Rocky Mountain juniper. See *Juniperus scopulorum*.
Roman chamomile. See *Chameamelum nobile*.
Roman wormwood. See *Artemisia pontica*.
Roof houseleek. See *Sempervivum tectorum*.
Rooihaartjie. See *Erica cerinthoides*.
Rooiklossieheide. See *Erica mammosa*.
Rosary vine. See *Ceropegia linearis* subsp. *woodii*.
Rose. See *Rosa*.
Rose acacia. See *Robinia hispida*.
Rose bay. See *Nerium oleander*.
Rose cactus. See *Pereskia grandifolia*.
Rose moss. See *Portulaca*.
Rose of China. See *Hibiscus rosa-sinensis*.

Rose of Jericho. See *Selaginella lepidophylla*.
Rose of Sharon. See *Hypericum calycinum*.
Rose periwinkle. See *Catharanthus roseus*.
Rose pincushion. See *Mammillaria zeilmanniana*.
Rosebay, White. See *Chamaenerion angustifolium* 'Album'.
Rosebud cherry. See *Prunus* x *subhirtella*.
Rosemary . See *Rosmarinus officinalis*.
Roseroot. See *Rhodiola rosea*.
Rosinweed. See *Grindelia*.
Rouen lilac. See *Syringa* x *chinensis*.
Round-headed club-rush. See *Scirpoides holoschoenus*.
Round-leaved mint-bush. See *Prostanthera rotundifolia*.
Round-leaved snow gum. See *Eucalyptus perriniana*.
Round-leaved wintergreen. See *Pyrola rotundifolia*.
Rowan. See *Sorbus aucuparia*.
Royal fern. See *Osmunda regalis*.
Royal paintbrush. See *Scadoxus puniceus*.
Royal palm. See *Roystonea*.
Royal red bugler. See *Aeschynanthus pulcher*.
Rubber plant. See *Ficus elastica*.
Rue. See *Ruta*.
Rushes. See Grasses, Bamboos, Rushes, and Sedges.
Russian comfrey. See *Symphytum* x *uplandicum*.
Russian vine. See *Fallopia baldschuanica*.
Rusty-back fern. See *Asplenium ceterach*.

S

Sacred bamboo. See *Nandina domestica*.
Sacred lotus. See *Nelumbo nucifera*.
Saffron buckwheat. See *Eriogonum crocatum*.
Saffron crocus. See *Crocus sativus*.
Saffron, Meadow. See *Colchicum autumnale*.
Sage. See *Salvia*.
Saguaro. See *Carnegiea gigantea*.
Sawfly orchid. See *Ophrys tenthredinifera*.
St. Bernard's lily. See *Anthericum liliago*.
St. Bruno's lily. See *Paradisea*.
St. Catherine's lace. See *Eriogonum*.
St. Dabeoc's heath. See *Daboecia cantabrica*.
St. John's wort. See *Hypericum*.
St. Joseph's lily. See *Hippeastrum vittatum*.
St. Vincent lilac. See *Solanum seaforthianum*.
Sand phlox. See *Phlox bifida*.
Sandwort. See *Arenaria*.
Sapphire berry. See *Symplocos paniculata*.
Sarana, Black. See *Fritillaria camschatcensis*.
Sargent cherry. See *Prunus sargentii*.
Sargent's rowan. See *Sorbus sargentiana*.
Sarsparilla, Australian. See *Hardenbergia violacea*.
Sausage tree. See *Kigelia africana*.
Savin. See *Juniperus sabina*.
Savory, Winter. See *Satureja montana*.
Saw palmetto. See *Serenoa repens*.
Sawara cypress. See *Chamaecyparis pisifera*.
Sawfly orchid. See *Ophrys tenthredinifera*.
Sawtooth oak. See *Quercus acutissima*.
Saxifrage. See *Saxifraga*.
Scabious. See *Knautia arvensis; Scabiosa*.
Scarlet ball cactus. See *Parodia haselbergii* subsp. *haselbergii*.
Scarlet banana. See *Musa coccinea*.
Scarlet fritillary. See *Fritillaria recurva*.
Scarlet ginger lily. See *Hedychium coccineum*.
Scarlet oak. See *Quercus coccinea*.
Scarlet plume. See *Euphorbia fulgens*.
Scarlet trompetilla. See *Bouvardia ternifolia*.
Scarlet trumpet honeysuckle. See *Lonicera* x *brownii*.
Scarlet turkscap lily. See *Lilium chalcedonicum*.
Scented paperbark. See *Melaleuca squarrosa*.
Scotch laburnum. See *Laburnum alpinum*.
Scotch rose. See *Rosa spinosissima*.
Scotch thistle. See *Onopordum acanthium*.
Scots pine. See *Pinus sylvestris*.
Screw pine. See *Pandanus*.
Scrub palmetto. See *Serenoa repens*.
Scurvy grass. See *Oxalis enneaphylla*.
Sea buckthorn. See *Hippophäe rhamnoides*.
Sea campion, Double. See *Silene uniflora* 'Robin Whitebreast'.
Sea daffodil. See *Pancratium maritimum*.
Sea holly. See *Eryngium*.
Sea kale. See *Crambe maritima*.
Sea lavender. See *Limonium*.
Sea lily. See *Pancratium maritimum*.
Sea onion. See *Drimia maritima*.
Sea pink. See *Armeria maritima*.
Sea squill. See *Drimia maritima*.
Sea urchin. See *Astrophytum asterias*.
Sedge. See *Carex*.
Sedges. See Grasses, Bamboos, Rushes, and Sedges.
Self-heal. See *Prunella*.
Sensitive fern. See *Onoclea sensibilis*.
Sensitive plant. See *Mimosa pudica*.
Sentry palm. See *Howea*.
Serbian spruce. See *Picea omorika*.
Service tree of Fontainebleau. See *Sorbus latifolia*.
Serviceberry. See *Amelanchier*.
Sessile oak. See *Quercus petraea*.
Shadbush. See *Amelanchier*.
Shag-bark hickory. See *Carya ovata*.
Shallon. See *Gaultheria shallon*.
Shamrock pea. See *Parochetus communis*.
Shasta daisy. See *Leucanthemum* x *superbum*.
Shaving brush plant. See *Haemanthus albiflos*.
Sheep laurel. See *Kalmia angustifolia*.
Sheep's bit. See *Jasione laevis*.
Sheepberry. See *Viburnum lentago*.
Shell flower. See *Alpinia zerumbet; Moluccella laevis*.
Shell ginger. See *Alpinia zerumber*.
Shield fern. See *Polystichum*.
Shingle oak. See *Quercus imbricaria*.
Shingle plant. See *Monstera acuminata*.
Shoo-fly. See *Nicandra physalodes*.
Shooting stars. See *Dodecatheon*.
Shore juniper. See *Juniperus conferta*.
Shore pine. See *Pinus contorta*.
Showy lady's slipper orchid. See *Cypripedium reginae*.
Shrimp plant. See *Justicia brandegeeana*.
Shrubby germander. See *Teucrium fruticans*.
Shrubby hare's ear. See *Bupleurum fruticosum*.
Shrubby restharrow. See *Ononis fruticosa*.
Siam tulip. See *Curcuma*.
Siberian bugloss. See *Brunnera macrophylla*.
Siberian crab apple. See *Malus baccata*.
Siberian elm. See *Ulmus pumila*.
Siberian flag. See *Iris sibirica*.
Siberian melic. See *Melica altissima*.
Siberian squill. See *Scilla siberica*.
Siberian wallflower. See *Erysimum* x *marshallii*.
Silk cotton tree. See *Ceiba*.
Silk tree. See *Albizia julibrissin*.
Silk vine. See *Periploca graeca*.
Silk weed. See *Asclepias*.
Silk-tassel bush. See *Garrya elliptica*.
Silky oak. See *Grevillea robusta*.
Silky wisteria. See *Wisteria brachybotrys* 'Shiro Kapitan'.
Silver ball cactus. See *Parodia scopa*.
Silver banner grass. See *Miscanthus sacchariflorus*.
Silver beech. See *Nothofagus menziesii*.
Silver bell. See *Halesia*.
Silver birch. See *Betula pendula*.
Silver cassia. See *Senna artemisioides*.
Silver chain. See *Dendrochilum glumaceum*.
Silver dollar cactus. See *Astrophytum asterias*.
Silver fir. See *Abies*.
Silver hedgehog holly. See *Ilex aquifolium* 'Ferox Argentea'.
Silver inch plant. See *Tradescantia zebrina*.
Silver jade plant. See *Crassula arborescens*.
Silver lime. See *Tilia tomentosa*.
Silver maple. See *Acer saccharinum*.
Silver torch. See *Cleistocactus strausii*.
Silver tree. See *Leucadendron argenteum*.
Silver vase plant. See *Aechmea fasciata*.
Silver vine. See *Actinidia polygama; Scindapsus pictus* 'Argyraeus'.
Silver wattle. See *Acacia dealbata*.
Silver willow. See *Salix alba* var. *sericea*.
Silver-leaved geranium. See *Pelargonium* 'Flower of Spring'.
Silver-margined holly. See *Ilex aquifolium* 'Argentea Marginata'.
Sitka spruce. See *Picea sitchensis*.
Skullcap. See *Scutellaria*.
Sky plant. See *Tillandsia ionantha*.
Skyflower. See *Duranta erecta*.
Sleepy mallow. See *Malvaviscus arboreus*.
Slender lady palm. See *Rhapis excelsa*.
Slipper flower. See *Calceolaria*.
Slipper orchid. See *Cypripedium; Paphiopedilum*.
Slipperwort. See *Calceolaria*.
Sloe. See *Prunus spinosa*.
Small-leaved box. See *Buxus microphylla*.
Small-leaved lime. See *Tilia cordata*.
Smallweed. See *Calamagrostis*.
Smoke tree. See *Cotinus coggygria*.
Smooth cypress. See *Cupressus arizonica* var. *glabra*.
Smooth sumach. See *Rhus glabra*.
Smooth-leaved elm. See *Ulmus minor*.
Snail flower. See *Vigna caracalla*.
Snake bush. See *Justicia adhatoda*.
Snake gourd. See *Trichosanthes cucumerina* var. *anguina*.
Snake-bark maple. See *Acer capillipes; Acer davidii; Acer davidii* subsp. *grosseri; Acer pensylvanicum; Acer rufinerve*.
Snake's-head fritillary. See *Fritillaria meleagris*.
Snakeroot. See *Polygala*.
Snapdragon. See *Antirrhinum*.
Snow bush. See *Breynia disticha*.
Snow creeper. See *Porana paniculata*.
Snow gum. See *Eucalyptus pauciflora* subsp. *niphophila*.
Snow poppy. See *Eomecon*.
Snow trillium. See *Trillium nivale*.
Snow-in-summer. See *Cerastium tomentosum; Euphorbia marginata*.
Snow-on-the-mountain. See *Euphorbia marginata*.
Snowball cactus. See *Mammillaria bocasana*.
Snowball cushion cactus. See *Mammillaria candida*.
Snowball tree. See *Viburnum opulus* 'Roseum'.
Snowbell. See *Soldanella*.
Snowberry. See *Symphoricarpos albus*.
Snowbush rose. See *Rosa* 'Dupontii'.
Snowdrop. See *Galanthus*.
Snowdrop tree. See *Halesia*.
Snowdrop windflower. See *Anemone sylvestris*.
Snowflake. See *Leucojum*.
Snowy woodrush. See *Luzula nivea*.
Soap plant. See *Chlorogalum*.
Soapwort. See *Saponaria*.
Soft shield fern. See *Polystichum setiferum*.
Solomon's seal. See *Polygonatum*.
Sorrel tree. See *Oxydendrum arboreum*.
Sorrel, Wood. See *Oxalis acetosella*.
South African sage wood. See *Buddleja salvifolia*.
South Sea arrowroot. See *Tacca leontopetaloides*.
Southern beech. See *Nothofagus*.
Southern Japanese hemlock. See *Tsuga sieboldii*.
Southern nettle tree. See *Celtis australis*.
Southern polypody. See *Polypodium cambricum*.
Southernwood. See *Artemisia abrotanum*.
Spade leaf. See *Philodendron domesticum*.
Spanish bayonet. See *Yucca aloifolia*.
Spanish bluebell. See *Hyacinthoides* x *massartiana*.
Spanish broom. See *Spartium junceum*.
Spanish chestnut. See *Castanea sativa*.
Spanish dagger. See *Yucca gloriosa*.
Spanish gorse. See *Genista hispanica*.
Spanish heath. See *Erica australis*.
Spanish morning glory. See *Merremia tuberosa*.
Spanish moss. See *Tillandsia usneoides*.
Spanish sage. See *Salvia lavandulifolia*.
Spanish shawl. See *Heterocentron elegans*.
Spanish tree heath. See *Erica australis*.
Sparmannia. See *Sparrmannia*.
Spearmint. See *Mentha spicata*.
Spiceberry. See *Ardisia crenata*.
Spicebush. See *Calycanthus; Lindera benzoin*.
Spider flower. See *Cleome*.
Spider lily. See *Hymenocallis*.
Spider plant. See *Anthericum; Chlorophytum comosum*.
Spiderwort. See *Tradescantia*.
Spignel. See *Meum athamanticum*.
Spike heath. See *Erica spiculifolia*.
Spiked speedwell. See *Veronica spicata*.
Spiloxene capensis. See *Hypoxis capensis*.
Spindle. See *Euonymus*.
Spindle tree. See *Euonymus*.
Spinning gum. See *Eucalyptus perriniana*.
Spleenwort. See *Asplenium*.
Spring beauty. See *Claytonia virginica*.
Spring bell. See *Olsynium douglasii*.
Spring cherry. See *Prunus* x *subhirtella*.
Spring crocus. See *Crocus vernus*.
Spring gentian. See *Gentiana verna*.
Spring snowflake. See *Leucojum vernum*.
Spruce. See *Picea*.
Spurge. See *Euphorbia*.
Spurge laurel. See *Daphne laureola*.
Squawroot. See *Trillium erectum*.
Squirrel tail grass. See *Hordeum jubatum*.
Squirrel's-foot fern. See *Davallia mariesii*.
Staff tree. See *Celastrus scandens*.
Staff vine. See *Celastrus*.
Stag's-horn sumach. See *Rhus typhina*.
Staghorn fern. See *Platycerium*.
Star daisy. See *Lindheimera texana*.
Star ipomoea. See *Ipomoea coccinea*.
Star jasmine. See *Trachelospermum jasminoides*.
Star magnolia. See *Magnolia stellata*.
Star-cluster. See *Pentas lanceolata*.
Star-of-Bethlehem. See *Ornithogalum*.
Star-of-Bethlehem orchid. See *Angraecum sesquipedale*.
Starflower. See *Hypoxis; Mentzelia; Orbea variegata*.**Statice.** See *Limonium; Psylliostachys*.
Stinking hellebore. See *Helleborus foetidus*.
Stinking iris. See *Iris foetidissima*.
Stock. See *Matthiola*.
Stone pine. See *Pinus pinea*.
Stone plant. See *Lithops*.
Stonecrop. See *Sedum*.
Stork's bill. See *Erodium*.
Stranvaesia. See *Photinia*.
Strawberry bush. See *Calycanthus floridus*.
Strawberry cactus. See *Mammillaria prolifera*.
Strawberry geranium. See *Saxifraga stolonifera* 'Tricolor'.
Strawberry tree. See *Arbutus unedo*.
Strawflower. See *Bracteantha bracteata; Rhodanthe*.
String-of-beads. See *Curio rowleyana*.
String-of-hearts. See *Ceropegia linearis* subsp. *woodii*.
Striped squill. See *Puschkinia scilloides* var. *libanotica*.
Stuartia. See *Stewartia*.
Subalpine fir. See *Abies lasiocarpa*.
Sugar bush. See *Protea repens*.
Sugar maple. See *Acer saccharum*.
Sugared-almond plum. See *Pachyphytum oviferum*.
Sulphur flower. See *Eriogonum umbellatum*.
Sumach. See *Rhus*.
Summer cypress. See *Bassia scoparia* f. *trichophylla*.
Summer snowflake. See *Leucojum aestivum*.
Sun plant. See *Portulaca grandiflora*.
Sun rose. See *Helianthemum*.
Sundew. See *Drosera*.
Sunflower. See *Helianthus, H. annuus*.
Sunrise horse-chestnut. See *Aesculus* x *neglecta*.
Suurberg cycad. See *Encephalartos longifolius*.
Swamp cypress. See *Taxodium distichum*.
Swamp lily. See *Lilium superbum*.
Swamp pink. See *Helonias bullata*.
Swan flower. See *Aristolochia grandiflora*.
Swan plant. See *Gomphocarpus physocarpus*.
Swan River daisy. See *Brachycome iberidifolia*.
Swedish ivy. See *Plectranthus oertendahlii; Plectranthus verticillatus*.
Swedish whitebeam. See *Sorbus intermedia*.
Sweet alyssum. See *Lobularia maritima*.
Sweet bay. See *Laurus nobilis; Magnolia virginiana*.
Sweet box. See *Sarcococca*.
Sweet briar. See *Rosa rubiginosa*.
Sweet buckeye. See *Aesculus flava*.
Sweet chestnut. See *Castanea*.
Sweet Cicely. See *Myrrhis*.
Sweet corn. See *Zea mays*.
Sweet flag. See *Acorus calamus*.
Sweet gum. See *Liquidambar styraciflua*.
Sweet pea. See *Lathyrus odoratus*.
Sweet pepper-bush. See *Clethra alnifolia*.
Sweet rocket. See *Hesperis matronalis*.
Sweet scabious. See *Scabiosa atropurpurea*.
Sweet sop. See *Annona*.
Sweet sultan. See *Amberboa*.
Sweet viburnum. See *Viburnum odoratissimum*.
Sweet violet. See *Viola odorata*.
Sweet William. See *Dianthus barbatus*.
Sweetheart ivy. See *Hedera hibernica* 'Deltoidea'.
Sweetwood. See *Glycyrrhiza glabra*.
Swiss mountain pine. See *Pinus mugo*.
Swiss-cheese plant. See *Monstera deliciosa*.
Switch ivy. See *Leucothöe fontanesiana*.
Sword brake. See *Pteris ensiformis*.
Sword fern. See *Nephrolepis exaltata*.
Sycamore. See *Acer pseudoplatanus*.
Sydney golden wattle. See *Acacia longifolia*.
Syrian juniper. See *Juniperus drupacea*.

T

Tacamahac. See *Populus balsamifera*.
Tail flower. See *Anthurium andraeanum*.
Taiwan cherry. See *Prunus campanulata*.
Taiwan spruce. See *Picea morrisonicola*.
Tamarind. See *Tamarindus indica*.
Tamarisk. See *Tamarix*.
Tampala. See *Amaranthus tricolor*.
Tanbark oak. See *Lithocarpus densiflorus*.
Tansy-leaved thorn. See *Crataegus tanacetifolia*.
Tape grass. See *Vallisneria spiralis*.

Tarajo holly. See *Ilex latifolia*.
Tarata. See *Pittosporum eugenioides*.
Tarentum myrtle. See *Myrtus communis* subsp. *tarentina*.
Taro. See *Alocasia macrorrhiza; Colocasia esculenta*.
Tarweed. See *Grindelia*.
Tasman celery pine. See *Phyllocladus aspleniifolius*.
Tasmanian blue gum. See *Eucalyptus globulus*.
Tasmanian snow gum. See *Eucalyptus coccifera*.
Tasmanian waratah. See *Telopea truncata*.
Tasmanian yellow gum. See *Eucalyptus johnstonii*.
Tassel flower. See *Amaranthus caudatus; Emilia*.
Tassel grape hyacinth. See *Muscari comosum*.
Tassel maidenhair. See *Adiantum raddianum* 'Grandiceps'.
Tea tree. See *Melaleuca alternifolia*.
Teasel. See *Dipsacus*.
Tecomaria. See *Tecoma*.
Teddy-bear vine. See *Cyanotis kewensis*.
Temple bells. See *Smithiantha cinnabarina*.
Temple juniper. See *Juniperus rigida*.
Tenby daffodil. See *Narcissus obvallaris*.
Terebinth tree. See *Pistacia terebinthus*.
Texan bluebell. See *Eustoma grandiflorum*.
Thatch-leaf palm. See *Howea forsteriana*.
Thimbleberry. See *Rubus odoratus*.
Thistle. See *Carlina*.
Thorn. See *Crataegus*.
Thread agave. See *Agave filifera*.
Thread palm. See *Washingtonia robusta*.
Three birds toadflax. See *Linaria triornithophora*.
Thrift. See *Armeria maritima*.
Thyme. See *Thymus*.
Ti tree. See *Cordyline fruticosa*.
Tibetan blue poppy. See *Meconopsis baileyi*.
Tickseed. See *Coreopsis*.
Tidy tips. See *Layia platyglossa*.
Tiger flower. See *Tigridia pavonia*.
Tiger lily. See *Lilium lancifolium*.
Timber bamboo. See *Phyllostachys bambusoides*.
Tingiringi gum. See *Eucalyptus glaucescens*.
Tipa tree. See *Tipuana tipu*.
Tipu tree. See *Tipuana tipu*.
Toad cactus. See *Orbea variegata*.
Toad lily. See *Tricyrtis*.
Toadflax. See *Linaria*.
Toadshade. See *Trillium sessile*.
Tobacco, Flowering. See *Nicotiana sylvestris*.
Tokyo cherry. See *Prunus* x *yedoensis*.
Toothwort. See *Lathraea clandestina*.
Torch cactus. See *Echinopsis spachiana*.
Torch lily. See *Kniphofia*.
Toyon. See *Heteromeles salicifolia*.
Trailing arbutus. See *Epigaea repens*.
Trailing azalea. See *Kalmia procumbens*.
Trailing fuchsia. See *Fuchsia procumbens*.
Trailing velvet plant. See *Ruellia makoyana*.
Transvaal daisy. See *Gerbera jamesonii*.
Traveller's joy. See *Clematis*.
Traveller's tree. See *Ravenala madagascariensis*.
Tree cotoneaster. See *Cotoneaster frigidus*.
Tree fern. See *Cyathea*.
Tree germander. See *Teucrium fruticans*.
Tree heath. See *Erica arborea*.
Tree ivy. See x *Fatshedera lizei*.
Tree lupin. See *Lupinus arboreus*.
Tree mallow. See *Lavatera*.
Tree of heaven. See *Ailanthus altissima*.
Tree peony. See *Paeonia potaninii*.
Tree poppy. See *Romneya*.
Tree purslane. See *Atriplex halimus*.
Tree tomato. See *Solanum betaceum*.
Trident maple. See *Acer buergerianum*.
Trigger plant. See *Stylidium graminifolium*.
Trinity flower. See *Trillium*.
Tropical almond. See *Terminalia catappa*.
Trout lily. See *Erythronium*.
Trumpet creeper. See *Campsis*.
Trumpet flower. See *Bignonia capreolata*.
Trumpet gentian. See *Gentiana acaulis; Gentiana clusii*.
Trumpet tree, Golden. See *Tabebuia chrysotricha*.
Trumpet tree, Pink. See *Tabebuia rosea*.
Trumpet vine. See *Campsis*.
Trumpet, Golden. See *Allamanda cathartica*.
Trumpet, Herald's. See *Beaumontia grandiflora*.
Trumpets. See *Sarracenia flava*.
Tuberose. See *Polianthes tuberosa*.
Tufted hairgrass. See *Deschampsia cespitosa*.
Tulip. See *Tulipa*.
Tulip tree. See *Liriodendron tulipifera*.
Tumbling Ted. See *Saponaria ocymoides*.
Tunic flower. See *Petrorhagia saxifraga*.
Tupelo. See *Nyssa*.
Turkey oak. See *Quercus cerris*.
Turkish hazel. See *Corylus colurna*.
Turkscap lily. See *Lilium superbum*.
Turpentine, Cyprus. See *Pistacia terebinthus*.
Turtle-head. See *Chelone oblique*.
Twin flower. See *Linnaea*.
Twin-flowered violet. See *Viola biflora*.
Two-color heath. See *Erica discolor*.

U

Udo. See *Aralia cordata*.
Ulmo. See *Eucryphia cordifolia*.
Umbrella bamboo. See *Fargesia murielae*.
Umbrella leaf. See *Diphylleia cymosa*.
Umbrella pine. See *Pinus pinea*.
Umbrella plant. See *Darmera*.
Umbrella tree. See *Magnolia macrophylla; Magnolia tripetala*.
Unicorn plant. See *Martynia annua*.
Urn plant. See *Aechmea fasciata*.

VW

Valerian. See *Centranthus*.
Van Volxem's maple. See *Acer velutinum* var. *vanvolxemii*.
Variegated Bishop's weed. See *Aegopodium podagraria* 'Variegatum'.
Variegated gout weed. See *Aegopodium podagraria* 'Variegatum'.
Variegated ground ivy. See *Glechoma hederacea* 'Variegata'.
Variegated iris. See *Iris variegata*.
Variegated Leyland cypress. See x *Cupressocyparis leylandii* 'Harlequin'.
Varnish tree. See *Toxicodendron vernicifluum*.
Veitch fir. See *Abies veitchii*.
Veitch's heath. See *Erica* x *veitchii*.
Veitch's screw pine. See *Pandanus tectorius* 'Veitchii'.
Velvet plant. See *Gynura aurantiaca*.
Venetian sumach. See *Cotinus coggygria*.
Venus flytrap. See *Dionaea muscipula*.
Venus's navelwort. See *Omphalodes linifolia*.
Vetch. See *Hippocrepis*.
Vine. See *Vitis*.
Vine maple. See *Acer circinatum*.
Violet. See *Viola*.
Violet cress. See *Ionopsidium acaule*.
Violet willow. See *Salix daphnoides*.
Viper's bugloss. See *Echium vulgare*.
Virgin's palm. See *Dioon edule*.
Virginia creeper. See *Parthenocissus quinquefolia*.
Virginia cowslip. See *Mertensia virginica*.
Virginian pokeweed. See *Phytolacca americana*.
Virginian stock. See *Malcolmia maritima*.
Virginian witch hazel. See *Hamamelis virginiana*.
Voodoo lily. See *Sauromatum venosum*.
Voss's laburnum. See *Laburnum* x *watereri* 'Vossii'.
Wake-robin. See *Trillium grandiflorum; Trillium sessile*.
Wall flag. See *Iris tectorum*.
Wall-spray. See *Cotoneaster horizontalis*.
Wallflower. See *Erysimum cheiri*.
Wallich's wood fern. See *Dryopteris wallichiana*.
Walnut. See *Juglans*.
Wandering Jew. See *Tradescantia fluminensis*.
Wandflower. See *Dierama; Galax*.
Wapato. See *Sagitarria latifolia*.
Waratah. See *Telopea speciosissima*.
Warminster broom. See *Cytisus* x *praecox* 'Warminster'.
Washington. See *Crataegus phaenopyrum*.
Washington thorn. See *Crataegus phaenopyrum*.
Water chestnut. See *Trapa natans*.
Water crowfoot. See *Ranunculus aquatilis*.
Water fern. See *Ceratopteris thalictroides*.
Water forget-me-not. See *Myosotis scorpioides*.
Water fringe. See *Nymphoides peltata*.
Water hawthorn. See *Aponogeton distachyos*.
Water lettuce. See *Pistia stratiotes*.
Water lily. See *Nymphaea*.
Water lily tulip. See *Tulipa kaufmanniana*.
Water oak. See *Quercus nigra*.
Water poppy. See *Hydrocleys nymphoides*.
Water soldier. See *Stratiotes aloides*.
Water vine. See *Cissus hypoglauca*.
Water violet. See *Hottonia palustris*.
Water wisteria. See *Hygrophila difformis*.
Watermelon plant. See *Peperomia argyreia*.
Watson's heath. See *Erica* x *watsonii*.
Wattle. See *Acacia*.
Wattle, Sydney golden. See *Acacia longifolia*.
Wavy hair grass. See *Deschampsia flexuosa* 'Tatra Gold'.
Wax flower. See *Hoya; Stephanotis floribunda*.
Wax plant. See *Hoya carnosa*.
Wax privet peperomia. See *Peperomia glabella*.
Wax tree. See *Toxicodendron succedanea*.
Wax vine. See *Senecio macroglossus*.
Waxflower, Geraldton. See *Chamelaucium uncinatum*.
Wayfaring tree. See *Viburnum lantana*.
Wedding-cake tree. See *Cornus controversa* 'Variegata'.
Weeping ash. See *Fraxinus excelsior* 'Pendula'.
Weeping aspen. See *Populus tremula* 'Pendula'.
Weeping beech. See *Fagus sylvatica* f. *pendula*.
Weeping birch. See *Betula pendula* 'Tristis'.
Weeping bottlebrush. See *Callistemon viminalis*.
Weeping broom. See *Carmichaelia stevensonii*.
Weeping fig. See *Ficus benjamina*.
Weeping willow. See *Salix babylonica*.
Wellingtonia. See *Sequoiadendron giganteum*.
Welsh poppy. See *Papaver cambricum*.
West Himalayan birch. See *Betula utilis* var. *jacquemontii*.
West Himalayan spruce. See *Picea smithiana*.
Western balsam poplar. See *Populus trichocarpa*.
Western hemlock. See *Tsuga heterophylla*.
Western milfoil. See *Myriophyllum hippuroides*.
Western prickly Moses. See *Acacia pulchella*.
Western red cedar. See *Thuja plicata*
Western yellow pine. See *Pinus ponderosa*.
Weymouth pine. See *Pinus strobus*.
Wheatley elm. See *Ulmus minor* 'Sarniensis'.
White ash. See *Fraxinus americana*.
White asphodel. See *Asphodelus albus*.
White baneberry. See *Actaea pachypoda*.
White cedar. See *Thuja occidentalis*.
White Chinese birch. See *Betula albosinensis*.
White cypress. See *Chamaecyparis thyoides*.
White elm. See *Ulmus americana*.
White evening primrose. See *Oenothera speciosa*.
White false hellebore. See *Veratrum album*.
White fir. See *Abies concolor*
White gardenia. See *Gardenia thunbergia*.
White gingerlily. See *Hedychium coronarium*.
White mugwort. See *Artemisia lactiflora*.
White mulberry. See *Morus alba*.
White mullein. See *Verbascum lychnitis*.
White paint brush. See *Haemanthus albiflos*.
White poplar. See *Populus alba*.
White rosebay. See *Chamaenerion angustifolium* 'Album'.
White sails. See *Spathiphyllum wallisii*.
White Sally. See *Eucalyptus pauciflora*.
White silk cotton tree. See *Ceiba pentandra*.
White snakeroot. See *Eupatorium rugosum*.
White spruce. See *Picea glauca*
White trumpet lily. See *Lilium longiflorum*.
White willow. See *Salix alba*
Whitebeam. See *Sorbus aria*.
Whiteywood. See *Melicytus ramiflorus*.
Whitlow-wort. See *Paronychia*.
Whorled heath. See *Erica manipuliflora*.
Whorled Solomon's seal. See *Polygonatum verticillatum*.
Whortleberry. See *Vaccinium myrtillus*.
Widow iris. See *Iris tuberosus*.
Wild buckwheat. See *Eriogonum*.
Wild cherry. See *Prunus avium*.
Wild coffee. See *Polyscias guilfoylei*.
Wild daffodil. See *Narcissus pseudonarcissus*.
Wild ginger. See *Asarum*.
Wild iris. See *Iris versicolor*.
Wild Irishman. See *Discaria toumatou*.
Wild jonquil. See *Narcissus jonquilla*.
Wild lily-of-the-valley. See *Pyrola rotundifolia*.
Wild marjoram. See *Origanum vulgare*.
Wild pansy. See *Viola tricolor*.
Wild pineapple. See *Ananas bracteatus*.
Wild rum cherry. See *Prunus serotina*.
Wild sweet William. See *Phlox divaricata*.
Wild yellow lily. See *Lilium canadense*.
Williams's heath. See *Erica* x *williamsii*.
Willow. See *Salix*.
Willow bottlebrush. See *Ceiba pentandra*.
Willow gentian. See *Gentiana asclepiadea*.
Willow herb. See *Epilobium*.
Willow myrtle. See *Agonis*.
Willow oak. See *Quercus phellos*.
Willow-leaf bay. See *Laurus nobilis* f. *angustifolia*.
Willow-leaved jessamine. See *Cestrum parqui*.
Willow-leaved magnolia. See *Magnolia salicifolia*.
Willow-leaved sunflower. See *Helianthus salicifolius*.
Windflower. See *Anemone Zephyranthes*.
Windmill palm. See *Trachycarpus fortunei*.
Wine-cup, Lacquered. See *Aechmea* Foster's Favorite Group.
Winecups. See *Babiana rubrocyanea*.
Wing nut. See *Pterocarya*.
Winged spindle. See *Euonymus alatus*.
Winter aconite. See *Eranthis*.
Winter cherry. See *Cardiospermum halicacabum; Physalis alkekengi; Solanum capsicastrum*.
Winter cress. See *Barbarea vulgaris*.
Winter heath. See *Erica carnea*.
Winter heliotrope. See *Petasites fragrans*.
Winter iris. See *Iris unguicularis*.
Winter jasmine. See *Jasminum nudiflorum*.
Winter savory. See *Satureja montana*.
Winter's bark. See *Drimys winteri*.
Winterberry. See *Ilex verticillata*.
Wintergreen. See *Gaultheria procumbens; Pyrola*.
Wintersweet. See *Chimonanthus*.
Wire-netting bush. See *Corokia cotoneaster*.
Wishbone flower. See *Torenia fournieri*.
Witch alder. See *Fothergilla gardenii*.
Witch hazel. See *Hamamelis*.
Woad. See *Isatis tinctoria*.
Wolf's bane. See *Aconitum*.
Wollemi pine. See *Wollemia nobilis*.
Wonga-wonga vine. See *Pandorea pandorana*.
Wood anemone. See *Anemone nemorosa*.
Wood lily. See *Trillium*.
Wood rose. See *Merremia tuberosa*.
Wood sorrel. See *Oxalis acetosella*.
Wood spurge. See *Euphorbia amygdaloides*.
Woodbine. See *Lonicera periclymenum*.
Woodruff. See *Galium odoratum*.
Woodrush. See *Luzula*.
Woodrush, Snowy. See *Luzula nivea*.
Woolly morning glory. See *Argyreia nervosa*.
Woolly sunflower. See *Eriophyllum*.
Woolly willow. See *Salix lanata*.
Wormwood. See *Artemisia*.
Wormwood cassia. See *Senna artemisioides*.
Wych elm. See *Ulmus glabra*.

XYZ

Yarrow. See *Achillea millefolium*
Yellow asphodel. See *Asphodeline lutea*.
Yellow bells. See *Tecoma stans*.
Yellow birch. See *Betula alleghaniensis*.
Yellow buckeye. See *Aesculus flava*.
Yellow elder. See *Tecoma stans*.
Yellow flag. See *Iris pseudacorus*.
Yellow flax. See *Linum flavum; Reinwardtia indica*.
Yellow foxglove. See *Digitalis grandiflora*.
Yellow fritillary. See *Fritillaria pudica*.
Yellow gentian. See *Gentiana lutea*.
Yellow jasmine. See *Jasminum humile*.
Yellow kangaroo paw. See *Anigozanthos flavidus*.
Yellow lady's slipper orchid. See *Cypripedium calceolus*.
Yellow mariposa. See *Calochortus luteus*.
Yellow monkey flower. See *Mimulus luteus*.
Yellow morning glory. See *Merremia tuberosa*.
Yellow oleander. See *Thevetia peruviana*.
Yellow ox-eye. See *Buphthalmum salicifolium*.
Yellow palm. See *Dypsis lutescens*.
Yellow parilla. See *Menispermum canadense*.
Yellow pitcher plant. See *Sarracenia flava*.
Yellow pond lily. See *Nuphar advena*.
Yellow rocket. See *Barbarea vulgaris*.
Yellow scabious. See *Cephalaria gigantea*.
Yellow skunk cabbage. See *Lysichiton americanus*.
Yellow turkscap lily. See *Lilium pyrenaicum*.
Yellow water lily. See *Nuphar lutea*.
Yellow whitlow grass. See *Draba aizoides*.
Yellow wood. See *Cladrastis kentukea*.
Yellow-root. See *Xanthorhiza simplicissima*.
Yesterday-today-and-tomorrow. See *Brunfelsia pauciflora*.
Yew. See *Taxus baccata*.
Young's weeping birch. See *Betula pendula* 'Youngii'.
Youth-on-age. See *Tolmiea menziesii*.
Yulan. See *Magnolia denudata*.
Zebra grass. See *Miscanthus sinensis* 'Zebrinus'.
Zebra plant. See *Aphelandra squarrosa; Goeppertia zebrina*.
Zigzag bamboo. See *Phyllostachys flexuosa*.

GLOSSARY OF TERMS

Terms printed in italics refer to other glossary entries.

Acidic [of soil]. With a *pH* value of less than 7; see also *alkaline* and neutral.

Adventitious [of roots]. Arising directly from a stem or leaf.

Aerial root. See *root*.

Air-layering. A method of propagation by which a portion of stem is induced to root by enclosing it in a suitable medium, such as damp moss, and securing it with plastic sheeting; roots will form if the moss is kept moist.

Alkaline [of soil]. With a *pH* value of more than 7; some plants will not tolerate alkaline soils and must be grown in *neutral* or *acidic* soil.

Alpine house. An unheated greenhouse, used for the cultivation of mainly alpine and bulbous plants, that provides greater ventilation and usually more light than a conventional greenhouse.

Alternate [of leaves]. Borne singly at each *node,* on either side of a stem.

Annual. A plant that completes its life cycle, from germination through to flowering and seeding and then death, in one growing season.

Anther. The part of a stamen that produces pollen; it is usually borne on a filament.

Apex. The tip or growing point of an organ such as a leaf or shoot.

Areole. A modified, cushionlike *tubercle,* peculiar to the family Cactaceae, that bears hairs, spines, leaves, side-branches or flowers.

Asclepiad. A member of the family Asclepiadaceae, e.g. *Asclepias, Hoya, Stephanotis.*

Auricle. An earlike lobe such as is sometimes found at the base of a leaf.

Awn. A stiff, bristlelike projection commonly found on grass seeds and *spikelets.*

Axil. The angle between a leaf and stem where an axillary bud develops.

Bedding plant. A plant that is mass-planted to provide a temporary display.

Biennial. A plant that flowers, seeds, and dies in the second season after germination, producing only stems, roots, and leaves in the first season.

Blade. The flattened and often broad part of a leaf.

Bloom. 1. A flower or blossom. 2. A fine, waxy, whitish or bluish-white coating on stems, leaves or fruits.

Bog garden. An area where the soil is kept permanently damp but not waterlogged.

Bole. The trunk of a *tree* from ground level to the first major branch.

Bolt. To produce flowers and seed prematurely, particularly in the case of vegetables such as lettuce and beetroot.

Bonsai. A method of producing dwarf trees or shrubs by special techniques that include pruning roots, pinching out shoots, removing growth buds, and training branches and stems.

Bract. A modified leaf at the base of a flower or flower cluster. Bracts may resemble normal leaves or be reduced and scalelike in appearance; they are often large and brightly colored.

Bud. A rudimentary or condensed shoot containing embryonic leaves or flowers.

Bulb. A storage organ consisting mainly of fleshy scales and swollen, modified leaf-bases on a much reduced stem. Bulbs usually, but not always, grow underground.

Bulbil. A small, *bulb*-like organ, often borne in a leaf *axil,* occasionally in a *flower head;* it may be used for propagation.

Bulblet. A small *bulb* produced at the base of a mature one.

Bur. 1. A prickly or spiny *fruit,* or aggregate of fruits. 2. A woody outgrowth on the stems of certain trees.

Cactus (pl. cacti). A member of the family Cactaceae, often *succulent* and spiny.

Calyx (pl. calyces). The outer part of a flower, usually small and green but sometimes showy and brightly colored, that encloses the petals in bud and is formed from the *sepals.*

Capsule. A dry *fruit* that splits open when ripe to release its seeds.

Carpel. The female portion of a flower, or part of it, consisting of an *ovary, stigma,* and *style.*

Catkin. A flower cluster, normally pendulous. Flowers lack petals, are often stalkless, surrounded by scalelike *bracts,* and are usually unisexual.

Caudex (pl. caudices). The stem base of a woody plant such as a *palm* or tree fern.

Cladode. A stem, often flattened, with the function and appearance of a leaf.

Claw. The narrow, basal portion of petals in some genera, e.g. *Dianthus.*

Climber. A plant that climbs using other plants or objects as a support: a **leaf-stalk** climber by coiling its leaf stalks around supports; a **root** climber by producing aerial, supporting roots; a **self-clinging** climber by means of suckering pads; a **tendril** climber by coiling its tendrils; a **twining** climber by coiling stems. **Scandent, scrambling,** and **trailing climbers** produce long stems that grow over plants or other supports; they attach themselves only loosely, if at all.

Clone. A group of genetically identical plants, propagated vegetatively.

Compound. Made up of several or many parts, e.g. a leaf divided into 2 or more *leaflets.*

Cone. The clustered flowers or woody, seed-bearing structures of a conifer.

Coppice. To cut back to near ground level each year in order to produce vigorous, ornamental shoots, as is usual with some *Cornus* and *Eucalyptus.*

Cordon. A trained plant restricted in growth to one main stem, occasionally 2–4 stems.

Corm. A *bulb*-like, underground storage organ consisting mainly of a swollen stem base and often surrounded by a papery tunic.

Cormlet. A small *corm* arising at the base of a mature one.

Corolla. The part of a flower formed by the petals.

Corona (crown). A petallike outgrowth sometimes borne on the *corolla,* e.g. the trumpet or cup of a *Narcissus.*

Corymb. A racemose flower cluster in which the inner flower stalks are shorter than the outer, resulting in a rounded or flat-topped head.

Cotyledon. See *seed leaf.*

Creeper. A plant that grows close to the ground, usually rooting as it spreads.

Crisped. Minutely wavy-edged.

Crown. 1. The part of the plant at or just below the soil surface from which new shoots are produced and to which they die back in fall. 2. The upper, branched part of a tree above the *bole.* 3. A *corona.*

Culm. The usually hollow stem of a grass or bamboo.

Cutting. A section of a plant that is removed and used for propagation. The various types of cutting are: **basal**—taken from the base of a plant (usually herbaceous) as it begins to produce growth in spring; **greenwood**—made from the tip of young growth; **hardwood**—mature wood taken at the end of the growing season; **leaf—**a detached leaf or part of a leaf; **root**—part of a semimature or mature root; **semiripe**—half-ripened wood taken during the growing season; softwood—young growth taken at the beginning of the growing season; **stem**—a greenwood, hardwood, semiripe or softwood cutting; **tip**—a greenwood cutting.

Cyme. A flower cluster in which each growing point terminates in a flower.

Deadhead. To remove spent flower heads so as to promote further growth or flowering, prevent seeding, or improve appearance.

Deciduous. Losing its leaves annually at the end of the growing season; **semi-deciduous** plants lose only some leaves.

Decumbent. Growing close to the ground but ascending at the tips.

Dentate. With toothed margins.

Die-back. Death of the tips of shoots due to frost or disease.

Dioecious. Bearing male and female flowers on separate plants.

Disbud. To remove surplus buds to promote larger flowers or fruits.

Disk floret, disk flower. A small and often inconspicuous, usually tubular flower, one of many that comprise the central portion of a composite flower head such as a daisy.

Division. A method of propagation by which a clump is divided into several parts during dormancy.

Elliptic [of leaves]. Broadening in the center and narrowing toward each end.

Entire [of leaves]. With untoothed margins.

Epiphyte. A plant that grows on the surface of another without being parasitic.

Evergreen. Retaining its leaves at the end of the growing season, although losing some older leaves regularly throughout the year; **semievergreen** plants retain only some leaves or lose older leaves only when the new growth is produced.

F1 hybrid. The first generation derived from crossing 2 distinct plants, usually when the parents are purebred lines and the offspring are vigorous. Seed from F1 hybrids does not come *true* to type.

Fall. An outer *perianth segment* of an iris, which projects outward or downward from the inner segments.

Fan palm. A *palm* with *palmate* rather than *pinnate* leaves.

Farina. A powdery, white, sometimes yellowish deposit naturally occurring on some leaves and flowers.

Fibrous root. A fine, young root, usually one of many.

Filament. The stalk of an *anther.*

Floret. A single flower in a head of many flowers.

Flower. The basic flower forms are: **single**, with one row of usually 4–6 petals; **semidouble,** with more petals, usually in 2 rows; **double,** with many petals in several rows and few or no stamens; **fully double,** usually rounded in shape, with densely packed petals and the stamens absent or obscured.

Flower head. A mass of small *flowers* or *florets* that together appear as one flower, e.g. a daisy.

Force. To induce artificially the early production of growth, flowers or *fruits.*

Frond. The leaflike organ of a fern. Some ferns produce both barren and fertile fronds, the fertile fronds bearing *spores.*

Fruit. The structure in plants that bears one or more ripe seeds, e.g. a berry or nut.

Glabrous. Not hairy.

Glaucous. Bluish-white, bluish-green or bluish-gray.

Globose. Spherical.

Glochid. One of the barbed bristles or hairs borne on a cactus *areole.*

Grafting. A method of propagation by which an artificial union is made between different parts of individual plants; usually the *shoot* (scion) of one is grafted onto the *rootstock* (stock) of another.

Heel. The small portion of old wood that is retained at the base of a cutting when it is removed from the stem.

Herbaceous. Dying down at the end of the growing season.

Hose-in-hose [of flowers]. With one *corolla* borne inside another, forming a double or semidouble *flower.*

Imbricated. Overlapping, like roof tiles.

Inflorescence. A cluster of flowers with a distinct arrangement, e.g. *corymb, cyme, panicle, raceme, spike, umbel.*

Insectivorous plant. A plant that traps and digests insects and other small animals to supplement its nutrient intake.

Key. A winged seed like those produced by the sycamore (*Acer pseudoplatanus*).

Lateral. A side growth that arises from the side of a shoot or root.

Layering. A method of propagation by which a stem is induced to root by being pegged down into the soil while it is still attached to the parent plant. See also *air-layering.*

Leaflet. A subdivision of a compound leaf.

Lenticel. A small, usually corky area on a stem or other part of a plant, which acts as a breathing pore.

Lime. Compounds of calcium; the amount of lime in soil determines whether it is *alkaline, neutral,* or *acidic.*

Linear [of leaves]. Very narrow with parallel sides.

Lip. A lobe comprising 2 or more flat or sometimes pouched *perianth segments.*

Loam. Well-structured, fertile soil that is moisture-retentive but free-draining.

Marginal water plant. A plant that grows partially submerged in shallow water or in moist soil at the edge of a pond.

Midrib. The main, central vein of a leaf or the central stalk to which the *leaflets* of a *pinnate* leaf are attached.

Monocarpic. Flowering and fruiting only once before dying; such plants may take several years to reach flowering size.

Mulch. A layer of organic matter applied to the soil over or around a plant to conserve moisture, protect the roots from frost, reduce the growth of weeds, and enrich the soil.

Naturalize. To establish and grow as if in the wild.

Nectar. A sweet, sugary liquid secreted by the **nectary**—glandular tissue usually found in the flower but sometimes found on the leaves or stems.

Neutral [of soil]. With a *pH* value of 7, the point at which soil is neither *acidic* nor *alkaline*.

Node. The point on a stem from which a leaf or leaves arise.

Obovate [of leaves]. Egg-shaped in outline, but broadest above the middle; length is 1.5–2 times the width.

Offset. A small plant that arises by natural vegetative reproduction, usually at the base of the mother plant.

Opposite [of leaves]. Borne 2 to each *node,* one opposite the other.

Ovary. The part of the female portion of the flower, containing embryonic seeds, that will eventually form the *fruit*.

Ovate [of leaves]. Egg-shaped in outline, but with a tapering point and broadest below the middle; length is usually 1.5 times the width.

Palm. An evergreen *tree* or *shrub*like plant, normally single-stemmed, with *palmate* or *pinnate* leaves usually in terminal rosettes; strictly a member of the family Palmae.

Palmate. Lobed in the fashion of a hand, with 5 lobes arising from the same point.

Pan. A shallow, free-draining pot in which alpine plants or bulbs are grown.

Panicle. A branched *raceme*.

Papilla (pl. papillae). A minute protuberance or glandlike structure.

Pealike [of flowers]. Of the same structure as a pea flower.

Peat bed. A specially constructed area, edged with peat blocks and containing moisture-retentive, acidic, peaty soil.

Pedicel. The stalk of an individual flower.

Peduncle. The stalk of a flower cluster.

Peltate [of leaves]. Shield-shaped, with the stalk inserted toward or at the center of the blade and not at the margin.

Perennial. Living for at least 3 seasons. In this book the term when used as a noun, and unless qualified, denotes an *herbaceous* perennial. A woody-based perennial dies down only partially, leaving a woody stem at the base.

Perianth. The outer parts of the flower comprising the *calyx* and the *corolla*. The term is often used when the calyx and the corolla are very similar in form.

Perianth segment. One portion of the *perianth,* resembling a *petal* and sometimes known as a tepal.

Petal. One portion of the often showy and colored part of the *corolla*. In some families, e.g. Liliaceae, the *perianth segments* are petallike and referred to horticulturally as petals.

Petaloid. Like a petal.

Petiole. The stalk of a *leaf*.

pH. The scale by which the acidity or alkalinity of soil is measured. See also *acidic, alkaline, neutral*.

Phyllode. A flattened leaf stalk, which functions as and resembles a leaf.

Pinch out. To remove the growing tips of a plant to induce the production of side-shoots.

Pinna (pl. pinnae). The primary division of a *pinnate* leaf. The fertile pinnae of ferns produce spores, vegetative pinnae do not.

Pinnate [of leaves]. Compound, with *leaflets* arranged on opposite sides of a central stalk.

Pistil. The female part of a flower comprising the *ovary, stigma* and *style*.

Pollard [of a tree]. To cut back to its main branches in order to restrict growth.

Pollination. The transfer of pollen from the *anthers* to the *stigma* of the same or different flowers, resulting in fertilization of the embryonic seeds in the *ovary*.

Procumbent. Prostrate, creeping along the ground.

Raceme. An unbranched flower cluster with several or many stalked flowers borne singly along a main axis, the youngest at the apex.

Ray floret, ray flower. One of the flowers, usually with strap-shaped petals, that together form the outer ring of flowers in a composite *flower head* such as a daisy.

Ray petal. The petal or fused petals, often showy, of a ray *floret*.

Recurved. Curved backward.

Reflexed. Bent sharply backward.

Remontant. Flowering more than once in each season.

Revert. To return to its original state, as when a plain green leaf is produced on a variegated plant.

Rhizome. An underground, creeping stem that acts as a storage organ and bears leafy shoots.

Root. The part of a plant, normally underground, that functions as anchorage and through which water and nutrients are absorbed. An **aerial root** emerges from the stem at some distance above the soil level.

Rootball. The roots and accompanying soil or compost visible when a plant is lifted.

Rootstock. A well-rooted plant onto which a scion is grafted; see *grafting*.

Rosette. A group of leaves radiating from approximately the same point, often borne at ground level at the base of a very short stem.

Runner. A horizontally spreading, usually slender stem that forms roots at each node; often confused with *stolon*.

Scale. 1. A reduced or modified leaf. 2. Part of a conifer cone.

Scandent. See *climber*.

Scarify. To scar the coat of a seed by abrasion in order to speed water intake and hence germination.

Scion. See *grafting*.

Scree. An area composed of a deep layer of stone chippings mixed with a small amount of loam. It provides very sharp drainage for plants that resent moisture at their base.

Seedhead. Any usually dry *fruit* that contains ripe seeds.

Seed leaf (cotyledon). The first leaf, pair of leaves or occasionally group of leaves produced by a seed as it germinates. In some plants they remain below ground.

Self-seed. To produce seedlings around the parent plant.

Sepal. Part of a *calyx,* usually insignificant but sometimes showy.

Series. The name applied to a group of similar but not identical plants, usually annuals, linked by common features.

Sessile. Without a stalk.

Sheath. A cylindrical structure that surrounds or encircles, partially or fully, another plant organ such as a stem.

Shoot. The aerial part of a plant which bears leaves. A **side-shoot** arises from the side of a main shoot.

Shrub. A plant with *woody stems,* usually well-branched from or near the base.

Shy-flowering. Reluctant to flower; producing few flowers.

Simple [of leaves]. Not divided into leaflets.

Soft-stemmed. The opposite of *woody-stemmed*.

Spadix (*pl. spadices*). A *spike*like flower cluster that is usually fleshy and bears many small flowers. Spadices are characteristic of the family Araceae, e.g. *Arum*.

Spathe. A large *bract,* or sometimes 2, frequently colored and showy, that surrounds a *spadix* (as in *Arum*) or an individual flower bud (as in *Narcissus*).

Sphagnum. Mosses common to bogs; their moisture-retentive character makes them ideal components of some growing media. They are used particularly for orchid cultivation.

Spike. A racemose flower cluster with several or many unstalked flowers borne along a common axis.

Spikelet. 1. The flowering unit of grasses comprising one or several flowers with basal *bracts*. 2. A small *spike,* part of a branched flower cluster.

Spore. The minute reproductive structure of flowerless plants, e.g. ferns, fungi, and mosses.

Sporangium (*pl. sporangia*). A body that produces *spores*.

Sport. A mutation, caused by an accidental or induced change in the genetic make-up of a plant, which gives rise to a shoot with different characteristics to those of the parent plant.

Spur. 1. A hollow projection from a petal, often producing *nectar*. 2. A short stem bearing a group of flower buds such as is found on fruit trees.

Spur back. To cut back side-shoots to within 2 or 3 buds of the main shoot.

Stamen. The *anther* and *filament*.

Standard. 1. A *tree* or *shrub* with a clear length of bare stem below the first branches. Certain shrubs, e.g. roses and fuchsias, may be trained to form standards. 2. One of the 3 inner and often erect *perianth segments* of the iris flower. 3. The larger, usually upright back petal of a flower in the family Leguminosae, e.g. *Lathyrus*.

Stapeliad. A member of the genus *Stapelia* and closely related genera of the family Asclepiadaceae.

Stem segment. A portion of a jointed stem between 2 *nodes,* most frequently occurring in cacti.

Sterile. Infertile, not bearing *spores,* pollen, seeds etc.

Stigma. The part of the female portion of the flower, borne at the tip of the *style,* that receives pollen.

Stipule. A small scale, or leaflike appendage, usually one of a pair, mostly borne at a *node* or below a leaf stalk.

Stock. See *rootstock*.

Stolon. A horizontally spreading or arching stem, usually above ground, which roots at its tip to produce a new plant.

Stop. To remove certain growing points of a plant so as to control growth or the size and number of flowers.

Stratify. To break the dormancy of some seeds by exposing them to a period of cold.

Style. The part of the flower on which the *stigma* is borne.

Subglobose. Almost spherical.

Subshrub. A plant that is woody at the base although the terminal shoots die back in winter.

Succulent. A plant with thick, fleshy leaves and/or stems; in this book, it is evergreen unless otherwise stated.

Sucker. A shoot that arises from below ground level, directly from the *root* or *rootstock*.

Summer-deciduous. Losing its leaves naturally in summer.

Taproot. The main, downward-growing root of a plant; it is also applied generally to any strong, downward-growing root.

Tendril. A threadlike structure, used to provide support; see also *climber*.

Tooth. A small, marginal, often pointed lobe on a leaf, *calyx* or *corolla*.

Tepal. See *perianth segment*.

Tree. A woody plant usually having a well-defined trunk or stem with a head of branches above.

Trifoliate. With 3 leaves; loosely, with 3 leaflets; **trifoliolate,** with 3 leaflets.

True [of seedlings]. Retaining the distinctive characteristics of the parent when raised from seed.

Truss. A compact cluster of flowers, often large and showy, e.g. those of pelargoniums and rhododendrons.

Tuber. A thickened, usually underground, storage organ derived from a stem or root.

Tubercle. A small, rounded protuberance; see also *areole*.

Turion. 1. A bud on a *rhizome*. 2. A fleshy, overwintering bud found on certain water plants.

Umbel. A usually flat-topped or rounded flower cluster in which the individual flower stalks arise from a central point. In a compound umbel each primary stalk ends in an umbel.

Upright [of habit]. With vertical or semi-vertical main branches.

Water bud. See *turion*.

Whorl. The arrangement of 3 or more organs arising from the same point.

Winged [of seeds or fruits]. Having a marginal flange or membrane.

Woody-stemmed. With a stem composed of woody fibers and therefore persistent, as opposed to soft-stemmed and *herbaceous*. A **semiwoody stem** contains some softer tissue and may be only partially persistent.

x The sign used to denote a hybrid plant derived from the crossing of 2 or more botanically distinct plants.

\+ The sign used to denote a graft hybrid; see *grafting*.

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Getty Images: John Glover (bc). **Clive Nichols**: Designer: Dominic Skinner (bl). **17 Dorling Kindersley**: Peter Anderson /The Brand Alley Garden designed by Paul Hervey-Brookes/ RHS Chelsea Flower Show 2013 (t); Marianne Majerus/RHS Hyde Hall Garden (br). **18 Clive Nichols**: Design: Ivan Tucker (b). **Photolibrary**: Ellen Rooney (t). 19 Photolibrary: Allan Mandell (tl). **20 Dorling Kindersley**: Brian North/Waterperry Gardens (t). **Marianne Majerus Garden Images**: Marianne Majerus/Hermannshof, Weinheim, Germany/Cassian Schmidt (b). **21 GAP Photos**: Elke Borkowski (cra); Martin Hughes-Jones (br). **Marianne Majerus Garden Images**: Andrew Lawson/Piet Oudolf/Bury Court, Hants (bl). **GAP Photos:** Designer: Marcus Barnett and Philip Nixon; Location: The Summer Garden, Bressingham Gardens, Norfolk, UK (br). **Clive Nichols:** Pettifers Garden, Oxfordshire (cr); Winkworth Arboretum, Surrey (tr). **23 Clive Nichols:** (tr, cr, crb, br). **24 GAP Photos**: Matt Anker (tl); Jonathan Buckley, Design:Carol and Malcolm Skinner (br). **Marianne Majerus Garden Images**: Marianne Majerus (clb). **Clive Nichols**: (cl, bl). **25 GAP Photos**: (br); Friedrich Strauss (bc). **Marianne Majerus Garden Images** (bl). **32 GAP Photos**: S & O. **34 Alamy Images**: Arco Images GmbH (c). **GAP Photos**: John Glover (bl). **35 GAP Photos**: Dave Zubraski (br). **36** Alamy Images: Florapix (br). **37 GAP Photos**: John Glover (br). **38-39 GAP Photos**: Jerry Harpur, Design: Naila Green. **39 Getty Images**: Martin Page (c). **40 GAP Photos**: Carole Drake (t). **Photolibrary**: Garden Pix LTD (b). **41 GAP Photos**: Adrian Bloom (tr); Neil Holmes (cr). **42 Garden World Images**: T Sims (cr). **43 Alamy Images**: John Glover (tc). **GAP Photos**: Nicola Browne, Design: Bernard Hicks (cr). **44 GAP Photos**: Carole Drake, Location: Sir Harold Hillier Gardens/ Hampshire County Council (c); Howard Rice (bl). **45 Alamy Images**: Steffen Hauser/ botanikfoto (ca); **The Garden Picture Library** (tc). **GAP Photos**: Elke Borkowski (br). **Garden World Images**: N+R Colborn (cra). **46 GAP Photos**: Martin Hughes-Jones (br). **47 Alamy Images**: Charles Stirling (cr). **49 Dorling Kindersley:** Peter Anderson/Designed by Vicky Harris. RHS Chelsea Flower Show 2012 (r). **50 Garden World Images**: L Thomas (cr). **51 Alamy Images**: Christopher Burrows (br). **52 GAP Photos**: Mark Bolton (br). **Garden World Images**: MAP/Jean-Yves Grospas (crb). **53 GAP Photos**: Richard Bloom (br); Howard Rice (cra). **Garden World Images**: John Martin (c). **54 GAP Photos**: Richard Bloom (clb); Jonathan Need (cb). **55 GAP Photos**: Carole Drake, Design: Josse and Brian Emerson (tr); **Getty Images**: Ron Evans (cb); John McCormack: (bc). **56-57 Clive Nichols**. **57 Clive Nichols**: (ftl, tl, tr, ftr). **59 GAP Photos**: Elke Borkowski (tr). **60 Garden World Images:** MAP/Arnaud Descat: *Fraxinus excelsior* 'Jaspidea'. **Photolibrary:** Paroli Galperti: *Davidia involucrata* **61 Alamy:** K-Pix: *Fagus sylvatica* 'Riversii'. **Garden World Images:** Gilles Delacroix: *Fagus sylvatica* 'Rohanii' **62 Alamy**: blickwinkel: *Celtis australis*. Getty: DEA/D. Dagli Orti: *Juglans regia*. **63 GAP Photos**: Martin Hughes-Jones: *Tilia platyphyllos* 'Rubra'. **Garden World Images**: W E Procter: *Platanus orientalis*. **64 Alamy**: blickwinkel: *Fagus sylvatica* 'Aspleniifolia'. **Photoshot**: Michael Warren: *Tilia* 'Petiolaris'. **Science Photo Library (SPL)**: Vaughan Fleming: *Quercus frainetto*. **65 Garden World Images:** *Pterocarya* x *rehderiana*. **Science Photo Library (SPL)**: Bob Gibbons: *Quercus coccinea*. **66 Alamy:** Holmes Garden Photos: *Acer rubrum*. **GAP Photos:** Heather Edwards: *Cercidiphyllum japonicum;* Martin Hughes-Jones: *Fraxinus angustifolia* 'Raywood'. **Garden World Images:** MAP/Frédéric Didillon: *Quercus palustris*. **67 Alamy:** Bob Gibbons: *Prunus avium*. **68 Alamy:** John Glover: *Quercus* x *turneri*. **Dorling Kindersley**: Mark Winwood/ *Lullingstone Castle, Kent : Eucalyptus johnstonii*. **69 Alamy:** John Glover: *Salix daphnoides;* Martin Hughes-Jones: *Malus hupehensis*. **Frank Lane Picture Agency (FLPA)**: Keith Rushforth: *Nothofagus menziesii*. **Science Photo Library (SPL)**: John Stiles: *Nothofagus betuloides*. **70 Dorling Kindersley**: Mark Winwood/RHS Wisley: *Magnolia* 'Spectrum'; *M. 'Susan'*. **Alamy:** fotoFlora: *M. campbellii subsp. mollicomata;* Andrea Jones: *M.x brooklynensis* 'Yellow Bird'. **The Garden Picture Library**: *M. grandiflora* 'Exmouth'. **Corbis:** Mark Bolton: *M. liliiflora* 'Nigra'; Clive Nichols: *M.* 'Galaxy'. **Garden World Images:** Adrian James: *M.*'Butterflies'; J Lilly: *M. wilsonii*. **Getty:** Richard Bloom: *M.* 'Black Tulip'. **Photolibrary:** J S Sira: *M.* x *loebneri* 'Leonard Messel', *M. x soulangeana* 'Rustica Rubra'. **71 Marianne Majerus Garden Images:** Marianne Majerus: *Halesia tetraptera* Monticola Group; **Dorling Kindersley**: Mark Winwood/RHS Wisley: *Prunus incisa* f. *yamadei*. **72 Garden World Images:** Paul Lane: *Paulownia tomentosa;* John Martin: *Quercus rubra* 'Aurea'. **The Garden Collection:** Derek Harris: *Aesculus* x *neglecta* 'Erythroblastos'. **73 Alamy:** CuboImages srl: *Quercus cerris* 'Argenteovariegata'. **Frank Lane Picture Agency (FLPA)**: Keith Rushforth: *Toona sinensis*. **Photolibrary:** J S Sira: *Catalpa bungei*. **74 Alamy:** blickwinkel: *Acer negundo* 'Variegatum'. **GardenPhotos.com:** judywhite: *Kalopanax septemlobus*. **75 Frank Lane Picture Agency (FLPA)**: Keith Rushforth: *Phellodendron chinense, Quercus marilandica*. **GardenPhotos.com:** judywhite: *Quercus ithaburensis subsp. macrolepis*. **Science Photo Library (SPL)**: John Stiles: *Emmenopterys henryi*. **76 Frank Lane Picture Agency (FLPA)**: David Hosking: *Oxydendrum arboreum*. **Garden World Images:** John Swithinbank: *Acer henryi*. **77 Alamy:** Andrea Jones: *Acer capillipes*. **78 Alamy:** Mark Boulton: *Quercus suber;* John Glover: *Acer pensylvanicum* 'Erythrocladum', *Betula ermanii;* Brian Hoffman: *Acer griseum;* MBP-One: *Betula utilis* subsp. *jacquemontii* 'Grayswood Ghost'; Wildscape: *Acer grosseri*. **GAP Photos:** Fiona Lea: *Betula utilis* subsp. *jacquemontii* 'Jermyns'. **Garden World Images:** T Sims: *Acer palmatum* 'Sango-kaku'. **Dorling Kindersley**: Mark Winwood/RHS Wisley: *Pinus sylvestris*. **Photolibrary:** Richard Bloom: *Pinus bungeana;* Mark Bolton: *Stewartia pseudocamellia;* John Glover: *Prunus serrula;* Francois de Heel: *Acer davidii*. **79 Frank Lane Picture Agency (FLPA)**: Martin B Withers: *Fraxinus excelsior* 'Pendula'. **The Garden Collection:** Andrew Lawson: *Acer pensylvanicum*. **80 Garden World Images:** John Swithinbank: *Trachycarpus fortunei*. **81 Garden World Images:** *Aesculus californica*. **83 Garden World Images:** Gilles Delacroix: *Prunus persica 'Prince Charming'*. **84 Getty:** Geoff Kidd: *Malus* x *floribunda*. **85 Alamy:** fotoFlora: *Eucryphia glutinosa;* Martin Hughes-Jones: *Hoheria lyallii*. **GAP Photos:** Martin Hughes-Jones: *Hoheria angustifolia*. **Getty:** Scientifica: *Cornus kousa*. **Science Photo Library (SPL)**: Adrian Thomas: *Eucryphia lucida*. **87 Alamy:** Holmes Garden Photos: *Cornus mas;* Martin Hughes-Jones: *Cornus kousa* 'National'; Organica: *Cornus kousa var. chinensis*. **GAP Photos:** Dave Zubraski: *Cornus nuttallii* 'Monarch'. **Garden World Images:** G. Delacroix: *Cornus alternifolia;* MAP/Nicole et Patrick Mioulane: *Cornus mas* 'Aureoelegantissima'; L Thomas: *Cornus florida* 'Rainbow.' **88 Frank Lane Picture Agency (FLPA)**: Keith Rushforth: *Ehretia dicksonii*. **Garden World Images:** *Ulmus glabra* 'Camperdownii'. **89 Frank Lane Picture Agency (FLPA)**: Ron Boardman, Life Science Image: *Koelreuteria paniculata*. **Garden World Images:** *Paraserianthes lophantha*. **90 Alamy:** imagebroker: *Acer palmatum* 'Osakazuki'. **Dorling Kindersley**: RHS Wisley: *Rhus* x *pulvinata* 'Red Autumn Lace'; *Rhus typhina* RADIENCE ('Sinrus'). **91 Alamy:** blickwinkel: *Sorbus intermedia*. **GAP Photos:** Howard Rice: *Sorbus thibetica* 'John Mitchell'. **Photoshot:** Photos Horticultural: *Sorbus megalocarpa*. **Science Photo Library (SPL)**: Malcolm Richards: *Sorbus forrestii*. **92 Garden World Images:** MAP/Arnaud Descat: *Acer laxiflorum*. **93 GAP Photos:** Martin Hughes-Jones: *Pittosporum eugenioides* 'Variegatum'. **Garden World Images:** *Arbutus unedo*. **94 Alamy:** Martin Hughes-Jones: *Ilex aquifolium* 'Madame Briot', *Ilex* x *altaclerensis* 'Belgica Aurea'; Plantography: *Ilex* x *altaclerensis* 'Camelliifolia Variegata'; The Garden Picture Library: *Ilex aquifolium* 'Bacciflava', *Ilex* x *altaclerensis* 'Golden King'. **Garden World Images:** Floramedia: *Ilex aquifolium* 'Silver Queen'; M Hughes-Jones: *Ilex aquifolium;* MAP/Arnaud Descat: *Ilex pernyi*. **Photolibrary:** Carole Drake: *Ilex crenata* 'Convexa.' **95 Alamy:** Arco Images GmbH: *Abies procera*. **96 Alamy:** WILDLIFE GmbH: *Wollemia nobilis*. **Garden World Images:** *Chamaecyparis lawsoniana* 'Intertexta'. **Photolibrary:** Leonie Lambert: *Cedrus deodara*. **98 Getty:** Tim Gainey: *Araucaria araucana*. **99 GAP Photos:** Adrian Bloom, location: David Wards Garden, Leeds, Yorkshire: *Picea engelmannii*. **Garden World Images:** *Taxodium distichum*. **Photoshot:** *Tsuga mertensiana* 'Glauca'. **Savill Gardens:** *Picea glauca* 'Coerulea'. **100 Alamy:** kpzfoto: *Juniperus chinensis* 'Keteleeri'. **GAP Photos:** FhF Greenmedia: *Picea likiangensis*. **102 Photolibrary:** *Taxus baccata* 'Lutea'; Fritz Polking: *Pinus contorta;* Howard Rice: *Taxus baccata* 'Lutea'. **103 Garden World Images:** *Juniperus chinensis* 'Obelisk'. **Science Photo Library (SPL)**: Chris Hellier: *Juniperus chinensis* 'Robust Green'. **104 Alamy:** Martin Hughes-Jones: *Pinus sylvestris* 'Aurea'. **Frank Lane Picture Agency (FLPA)**: R P Lawrence: *Taxus cuspidata*. **Garden World Images:** *Pinus pinea*. **Photolibrary:** Ron Evans: *Chamaecyparis obtusa* 'Crippsii'. **105 Dorling Kindersley**: Mark Winwood/RHS Wisley: *Picea pungens* 'Globosa'; *Juniperus squamata* 'Blue Carpet.' **GAP Photos:** Adrian Bloom: *Abies concolor* 'Compacta', *Pinus heldreichii* 'Smidtii'; J S Sira/Design: Collin Elliott: *Juniperus* x *pfitzeriana* 'Old Gold'. **Garden World Images:** *Chamaecyparis obtusa* 'Nana Gracilis', *Thuja plicata* 'Stoneham Gold', *Platycladus orientalis* 'Aurea Nana'; R Coates: *Juniperus squamata* 'Holger'; MAP/Nathalie Pasquel: *Chamaecyparis obtusa* 'Nana Gracilis', *Platycladus orientalis* 'Aurea Nana'. **106-107 GAP Photos:** Richard Bloom. **107 GAP Photos:** Sharon Pearson (ftl). **Clive Nichols:** (tl) (ftr) (tr). **110 Garden World Images:** *Amelanchier lamarckii*. **111 Garden World Images:** *Dipelta floribunda*. **Photolibrary:** Howard Rice: *Berberis valdiviana*. **112 Alamy:** Holmes Garden Photos: *Salix exigua*. **113 Garden World Images:** Martin Hughes-Jones: *Crinodendron patagua, Elaeagnus umbellata*. **114 GAP Photos:** FhF Greenmedia: *Buddleja salviifolia;* Lynn Keddie: *Buddleja* x *weyeriana* 'Moonlight'. **Garden World Images:** D Brown: *Buddleja colvilei* 'Kewensis'; M Hughes-Jones: *Buddleja* 'Lochinch', *Buddleja davidii* 'Pink Delight', *Buddleja* x *weyeriana* 'Sungold'. **The Garden Collection:** Jonathan Buckley: *Buddleja* 'Lochinch', *Buddleja davidii* 'Black Knight'; Nicola Stocken Tomkins: *Buddleja davidii* 'Dartmoor'. **115 Alamy:** Holmes Garden Photos: *Syringa vulgaris* 'Andenken an Ludwig Späth'. **Garden World Images:** G. Delacroix: *Syringa pubescens subsp. patula* 'Miss Kim'; M Hughes-Jones: *Syringa* x *persica;* MAP/ Arnaud Descat: *Syringa komarowii* subsp. *reflexa, Syringa vulgaris* 'Firmament', *Syringa vulgaris* 'Katherine Havemeyer'. **Marianne Majerus Garden Images:** Marianne Majerus: *Syringa* x *persica* 'Alba'. **117 Garden World Images:** *Cotoneaster* 'Cornubia'. **John Glover:** *Cotinus* 'Flame'. **118 Alamy:** *Hamamelis* x *intermedia* 'Barmstedt Gold'. **Dorling Kindersley:** Mark Winwood/RHS Wisley: *Hamamelis* x *intermedia* 'Arnold Promise'. **Garden World Images:** Jacqui Dracup: *Hamamelis* x *intermedia* 'Robert'. **Photolibrary:** Richard Bloom: *Hamamelis* x *intermedia* 'Primavera'. **Marianne Majerus Garden Images:** Marianne Majerus: *Azara microphylla*. **119 GAP Photos:** Geoff Kidd: *Pittosporum dallii*. **Garden World Images:** Geoff Kidd: *Prunus lusitanica* 'Variegata'. **120 Garden World Images:** *Tetrapanax papyrifer,* MAP/A Descat/ Collection Pepineiere Stervinou: *Camellia japonica* 'Nobilissima'; John Martin: *C. japonica* 'Alba Plena'. **Alamy:** Martin Hughes-Jones: *C.* 'Cornish Snow'. **GAP Photos:** S & O: *C.* x *williamsii* 'Jury's Yellow'. **121 GAP Photos:** Fiona Lea: *Camellia japonica* 'Hagoromo'. **Alamy:** blickwinkel/Jagel: *C.* 'Spring Festival'; John Glover: *C. japonica* 'Lavinia Maggi'. **GAP Photos:** Richard Bloom: *C.* 'Inspiration'; Geoff Kidd: *C. japonica* 'Brushfield's Yellow'; Howard Rice: *C.japonica* 'Tricolor'; J S Sira: *C. japonica* 'Bob's Tinsie'. **Garden World Images:** G. Delacroix: *C. reticulata* 'Captain Rawes'; MAP/A Descat/Collection Pepineiere Stervinou: *C.* 'Black Lace', *C.*'Freedom Bell'. **Photolibrary:** Clive Nichols /GPL: *C.x williamsii* 'Debbie'. **122 Garden World Images:** *Rhododendron* 'Percy Wiseman'; MAP/Nicole et Patrick Mioulane: *Choisya* x *dewitteana* 'Aztec Pearl'. **123 Alamy:** Auscape International Pty Ltd: *Telopea truncata;* John Glover: *Prunus mume* 'Beni-chidori'. **GAP Photos:** S & O: *Ribes sanguineum* 'Pulborough Scarlet'. **Garden World Images:** *Leptospermum scoparium* 'Red Damask'. **124 Dorling Kindersley**: Mark Winwood/RHS Wisley: *Rhododendron rex* subsp.*fictolacteum*. **GAP Photos:** Dave Bevan: *R. sinogrande*. **Garden World Images:** M Hughes-Jones: *R.* 'Gomer Waterer', *R. quinquefolium;* MAP/Nathalie Pasquel: *R.* 'Golden Torch'. **Photolibrary:** Georgianna Lane: *R. decorum;* Brigitte Thomas: *R. williamsianum*. **Photoshot:** Michael Warren: *R. decorum*. **Royal Horticultural Society (RHS)**: Carol Sheppard: *R. pachysanthum*. **125 Alamy:** Brian Hoffman: *R. arboreum;* Holmes Garden Photos: *R. praecox*. **GAP Photos:** Richard Bloom: *R.* 'Fastuosum Flore Pleno'; FhF Greenmedia: *R. cinnabarinum;* Neil Holmes: *R.* 'Blue Danube'. **Garden World Images:** G Delacroix: *R.* 'Blaauw's Pink''; M Hughes-Jones: *R.* 'Daviesii', *R.fulvum;* Christopher Lavis-Jones: *R.* 'Patty Bee'. **Photolibrary:** Georgianna Lane: *R.* 'Hotei'. **Royal Horticultural Society (RHS)**: Rebecca Ross: *R.* 'Gibraltar'. **126 Alamy:** Holmes Garden Photos: *Cornus sericea* 'Flaviramea'; J Need: *C.* 'White Gold'; Plantography: *C. alba* 'Elegantissima'. **GAP Photos:** J S Sira: *Corylopsis pauciflora;* Jo Whitworth: **Garden World Images:** T Sims: *Cornus alba* 'Aurea', *Cornus sanguinea* 'Midwinter Fire'. **Dorling Kindersley**: Mark Winwood/RHS Wisley: *C. sanguinea* 'Anny's Winter Orange'; Edgeworthia chrysantha. **127 Garden World Images:** *Deutzia scabra, Kerria japonica* 'Pleniflora', *Lindera benzoin;* Liz Cole: *Deutzia scabra*. **Photolibrary:** Mel Watson: *Philadelphus* 'Beauclerk'. **128 Dorling Kindersley**: Mark Winwood/RHS Wisley: Philadelphus 'Sybille.' **130 Garden World Images:** Trevor Sims: *Colletia hystrix*. **P-Pod:** Tim Argles: *Olearia ilicifolia*. **Photoshot:** Photos Horticultural: *Zenobia pulverulenta*. **Science Photo Library (SPL)**: Nick Wiseman: *Escallonia virgata*. **132 Alamy:** Holmes Garden Photos: *Olearia macrodonta*. **GAP Photos:** Martin Hughes-Jones: *Hibiscus syriacus* 'Red Heart'; Mel Watson: *Aloysia triphylla*. **133 Garden World Images:** *Robinia hispida*. **134 Alamy:** Martin Hughes-Jones: *Hydrangea paniculata* 'Silver Dollar'; Andrea Jones: *H. paniculata* PINKY-WINKY. **GAP Photos:** Martin Hughes-Jones: *H. serrata* 'Diadem'. **Garden World Images:** G. Delacroix: *H. quercifolia*. SNOWFLAKE. **Marianne Majerus Garden Images:** Marianne Majerus/RHS Wisley Garden: *H. paniculata* 'Big Ben'. **Photolibrary:** Sunniva Harte: *H. heteromalla* 'Snowcap'; Marga Werner: *H. paniculata* 'Phantom'. **Science Photo Library (SPL)**: A-Z Botanical Collection: *H. macrophylla* 'Générale Vicomtesse de Vibraye'. **135 Dorling Kindersley**: Mark Winwood/RHS Wisley: *H.. serrata* 'Kiyosumi'. **Alamy:** John Glover: *H.* paniculata PINK DIAMOND; Holmes Garden Photos: Andrea Jones: *H. paniculata* 'Dharuma'. **GAP Photos:** Martin Hughes-Jones: *H. paniculata* 'Limelight'. **Garden World Images:** R Coates: *H. serrata* 'Grayswood'; Rita Coates: *H. aspera* 'Mauvette'; G. Delacroix: *H. macrophylla* 'Libelle', Steffen Hauser: *H. aspera* subsp. *sargentiana*. **136 Garden World Images:** MAP/Nathalie Pasquel: *Erythrina* x *bidwillii*. **137 Alamy:** Milestone Media: *Abutilon* 'Ashford Red'. **Garden World Images:** *Camellia japonica* 'Mathotiana'. **138 Garden World Images:** *Ceanothus impressus*. **140 Garden World Images:** *Euonymus europaeus* 'Red Cascade'. **The Garden Collection:** Andrew Lawson: *Rhus glabra*. **141 GAP Photos:** David Dixon: *Berberis* x *carminea* 'Barbarossa'. **Garden World Images:** *Leonotis leonurus*. **Getty:** Rob Whitworth: *Disanthus cercidifolius*.

142 Alamy: CuboImages srl: *Cotoneaster conspicuus,* Steffen Hauser/botanikfoto: *Cotoneaster salicifolius;* Colin Underhill: *Euonymus hamiltonianus* subsp. *sieboldianus.* **Dorling Kindersley**:/ RHS Wisley: *Euonymus cornutus.* **Garden World Images:** S Hauser: *Daphne mezereum;* D Murphy: *Cotoneaster frigidus.* **143 Garden World Images:** *Nandina domestica* 'Fire Power'. **144 GAP Photos:** John Glover: *Fatsia japonica* 'Variegata'. **Getty:** Hemant Jariwala: *Mahonia japonica.* **145 Alamy:** blickwinkel: *Buxus balearica.* **Garden World Images:** *Gaultheria* x *wisleyensis* 'Wisley Pearl'; Trevor Sims: *Prunus laurocerasus* 'Zabeliana'. **146 Alamy:** Holmes Garden Photos: Martin Hughes-Jones: *Chaenomeles speciosa* 'Snow'. **Dorling Kindersley**: Mark Winwood/RHS Wisley *Ribes sanguineum* 'Koja'. **148 Alamy:** Chris Howes/Wild Places Photography: *Ulex europaeus.* **The Garden Collection:** Derek Harris: *Choisya ternata* SUNDANCE. **149 Garden World Images:** *Convolvulus cneorum;* x *Halimiocistus sahucii.* **150 Garden World Images:** *Rhaphiolepis umbellata.* **151 GAP Photos:** J S Sira: *Hebe recurva.* **Garden World Images:** Martin Hughes-Jones: *Ozothamnus ledifolius;* M Hughes-Jones: *Ozothamnus ledifolius.* **152 GAP Photos:** Dianna Jazwinski: *Deutzia* 'Mont Rose'; **Dorling Kindersley**: Mark Winwood/RHS Wisley: *Hebe* 'Nicola's Blush'. **154 Alamy:** Arco Images GmbH: *Fuchsia* 'Riccartonii'; John Glover: *Fuchsia magellanica;* **Dorling Kindersley**: Mark Winwood/RHS Wisley: Fuchsia 'Mrs Popple'. **GAP Photos:** Dave Zubraski: *Fuchsia* 'Howlett's Hardy'. **Garden World Images:** T Sims: *Fuchsia* 'Corallina'. **Getty:** *Fuchsia magellanica* 'Thompsonii'. **Marianne Majerus Garden Images:** Marianne Majerus: *Fuchsia magellanica var. gracilis.* **Science Photo Library (SPL)**: Mike Danson: *Fuchsia* 'Madame Cornélissen'. **155 Alamy:** Martin Hughes-Jones: *Salvia* x *jamensis* 'La Luna'; Plantography: *Salvia microphylla* 'La Foux', *Salvia* x *jamensis* 'Maraschino'. **GAP Photos:** Heather Edwards: *Salvia microphylla* 'Cerro Potosi'; FhF Greenmedia: *S.* x *jamensis* 'Red Velvet'; Marcus Harpur: *S. microphylla* 'Kew Red'. **Garden World Images:** N R Colborn: *S.* 'Hot Lips'; G Delacroix: *S.* x *jamensis* 'Sierra San Antonio'; G. Delacroix: *S. officinalis* 'Berggarten'; L Thomas: *S. greggii* 'Icing Sugar'. **Getty:** De Agostini: *S. officinalis.* **Photolibrary:** Geoff Kidd: *S. microphylla* 'Newby Hall'; Juliette Wade: *S. microphylla* 'Pink Blush'; **Dorling Kindersley**: Mark Winwood/RHS Wisley: *S. officinalis* 'Purpurascens'. **157 Dorling Kindersley**: Mark Winwood/Downderry Nursery: *Lavandula* x *chaytoriae* 'Sawyers'. **158 Alamy:** *Lavandula angustifolia* 'Miss Katherine'. **GAP Photos:** Elke Borkowski: *L. pedunculata* subsp. *pedunculata* 'James Compton'; Dianna Jazwinski: *L. angustifolia* 'Imperial Gem'; J S Sira: *L.* 'Helmsdale', *L. angustifolia* 'Loddon Blue', *L. stoechas* subsp. *stoechas* f.*rosea 'Kew Red'.* **Garden World Images:** G. Delacroix: *L.lanata;* C Fairweather: *L.* angustifolia LITTLE LOTTIE ('Clarmo'), *L. stoechas* subsp. *stoechas* f. *leucantha* 'Snowman'; T Sims: *L.angustifolia* 'Hidcote'; L Thomas: *L.*'Regal Splendour', *L.*'Willow Vale'. **Photolibrary:** Chris L Jones: *L.x intermedia* 'Alba'. **159 Alamy:** Martin Hughes-Jones: *Ceanothus thyrsiflorus* var. *repens.* **Garden World Images:** *Ceratostigma willmottianum.* **160 Garden World Images:** Gilles Delacroix: *Symphoricarpos orbiculatus* 'Foliis Variegatis'. **161 GAP Photos:** Martin Hughes-Jones: *Hypericum* x *inodorum* 'Elstead'; J S Sira: *Halimium lasianthum* subsp. *formosum.* **Garden World Images:** *Coriaria terminalis* var. x*anthocarpa, Hypericum kouytchense;* **Dorling Kindersley**: Mark Winwood/RHS Wisley: *Halimium lasianthum* subsp.formosum. **162 Garden World Images:** *Berberis* 'Rubrostilla', *Cytisus scoparius f. andreanus.* **Photolibrary:** Mark Bolton: *Cuphea cyanea;* Mark Turner/GPL: *Myrica gale.* **163 GAP Photos:** Adrian Bloom: *Fothergilla gardenii.* **The Garden Collection:** Jonathan Buckley: *Lonicera* x *purpusii.* **164 Alamy:** Plantography: *Pittosporum tenuifolium* 'Tom Thumb'. **165 GAP Photos:** Friedrich Strauss: *Artemisia abrotanum* Artemisia abrotanum. **Garden World Images:** *Hebe cupressoides.* **166 Alamy:** J S Sira/ GPL: *Erica carnea* 'Challenger'; Arco Images GmbH: *Erica vagans* 'St Keverne'; John Glover: *Calluna vulgaris* 'Annemarie', *Calluna vulgaris* 'Wickwar Flame'; Martin Hughes-Jones: *Erica carnea* 'Ann Sparkes'; Piotr & Irena Kolasa: *Calluna vulgaris* 'Dark Star'. **Dorling Kindersley**: Mark Winwood/RHS Wisley: Erica x *darleyensis* 'Arthur Johnson'; E. *lusitanica* 'Sheffield Park'. **GAP Photos:** Geoff Kidd: *Erica* x *darleyensis* 'Furzey'. **Garden World Images:** G. Delacroix: *Erica erigena* 'Brian Proudley'; T Jennings: *Erica vagans* 'Birch Glow'; M Hughes-Jones: *Erica carnea* 'Golden Starlet'; MAP/N Pasquel: *Erica vagans* 'Mrs D. F. Maxwell'. **GardenPhotos.com:** Judy White: *Calluna vulgaris* 'Beoley Gold'. **167 GAP Photos:** Geoff Kidd: *Ruscus aculeatus.* **168 GAP Photos:** Geoff Kidd. **168 Garden World Images:** Trevor Sims. **169 GAP Photos:** Mark Anker (ftr); FhF Greenmedia (ftl); Leigh Clapp (tr). **173 Dorling Kindersley:** Brian North/RHS Chelsea Flower Show 2012: *Rosa* TRANQUILITY ('Ausnoble'); **Charles Quest-Ritson:** *R.* 'Reine Victoria' **174 Charles Quest-Ritson:** *R.* OLIVIA ROSE AUSTIN ('Ausmixture') **175 Charles Quest-Ritson:** *R.* RHAPSODY IN BLUE ('Frantasia'). **176 Alamy:** John Glover: *R. moyesii* 'Geranium'; Holmes Garden Photos: *R. sericia* subsp. *omeiensis f. ptenracantha.* **Garden World Images:** MAP/Jean-Yves Grospas: *R. rubiginosa.* **Getty:** Rob Whitworth: *R. rugosa.* **Marianne Majerus Garden Images:** Marianne Majerus: *R. glauca.* **177 GAP Photos:** Michael Howes: *R.* EVELYN; Rob Whitworth: *R.* KENT. **Photoshot:** Photos Horticultural: *R.* KAREN BLIXEN ('Poulari'). **Charles Quest-Ritson:** *R.* SCHNEEWITTCHEN ('Korbin'). **178 Alamy:** Natural Garden Images: *R.* MANY HAPPY RETURNS. **Dorling Kindersley:** Brian North /RHS Chelsea Flower Show 2012: *R.* BOSCOBEL ('Auscousin'); Mark Winwood/ Hampton Court Flower Show 2014: *R.* FOR YOUR EYES ONLY ('Cheweyesup'). **Charles Quest-Ritson:** *R.* 'Sea Foam'. **179 Dorling Kindersley:** Mark Winwood/RHS Wisley: *R.* BROTHER CADFAEL ('Ausglobe'). **Charles Quest-Ritson:** *R.* 'La France'. **Alamy:** Roger Cope: *R.* NOSTALGIE ('Taneiglat'). **Garden World Images:** Gilles Delacroix: *R.* HEIDETRAUM *('Noatraum').* **180 Charles Quest-Ritson:** *R.* PRINCESS ANNE ('Auskitchen'); *R.* 'Thérèse Bugnet'; *R.* INTRIGUE ('Jacum'). **182 Dorling Kindersley:** Mark Winwood/Hampton Court Flower Show 2014: *R.* CHARLOTTE ('Auspoly'); Mark Winwood/RHS Wisley: *R.* GOLDEN WEDDING ('Arokris'). **Garden World Images:** G Delacroix: *R.* JULIA CHILD ('Wekvossutono'). **Charles Quest-Ritson:** *R.* EASY GOING ('Harglow'); *R.* CLAIRE AUSTIN ('Ausprior'); *R.* MOUNTBATTEN ('Harmantelle'); *R.* 'Rêve d'Or'. **183 Dorling Kindersley**: Mark Winwood/Hampton Court Flower Show 2014; *R.* LADY EMMA HAMILTON ('Ausbrother'). **Harkness Roses, roses.co.uk:** *R.* EASY DOES IT. **Charles Quest-Ritson:** *R.* ORANGES 'N' LEMONS ('Macoranlem') ; *R.* WARM WELCOME ('Chewizz'); *R.* ABRAHAM DARBY ('Auscot'); *R.* FELLOWSHIP ('Harwelcome'); **184 Garden World Images:** *R.* 'Félicité Perpétue'. **185 Garden World Images:** *R.* 'Veilchenblau'. **Dorling Kindersley:** Mark Winwood/RHS Wisley: *R.* 'Climbing Cécile Brünner'. **Charles Quest-Ritson:** *R.* 'Climbing Madame Caroline Testout'. **186 Charles Quest-Ritson:** *R.* JASMINA ('Korcentex'); R. COCKTAIL ('Meimick'). **Garden World Images:** *R.* 'Guinée'. **187 Chris Warner:** *R.* GARDENERS GLORY. ('Chewability') .**GAP Photos:** Maxine Adcock: *R.* SUMMER WINE ('Korizont'). **Roses UK:** *R.* ALIBABA ('Chewalibaba'). **189 GAP Photos:** Andrea Jones (tl); Jerry Harpur (ftl); Marcus Harpur (ftr). **190 GAP Photos:** John Glover (bl). **191 GAP Photos:** Maddie Thornhill (tr). **192 Photos Horticultural:** *Decumaria sinensis.* **Alamy:** Holmes Garden Photos: *Prostanthera rotundifolia* 'Rosea'; Martin Hughes-Jones: *Acradenia frankliniae.* **Garden World Images:** Trevor Sims: *Holboellia latifolia.* **Dorling Kindersley:** Mark Winwood/RHS Wisley: *Ercilla volubilis.* **193 Alamy:** John Glover: *Jasminum beesianum.* **Garden World Images:** *Mitraria coccinea, Ribes speciosum;* MAP/Arnaud Descat: *Mitraria coccinea;* Trevor Sims: *Campsis radicans* 'Indian Summer', *Ribes speciosum.* **194 Photolibrary:** Mark Bolton: *Ceanothus arboreus* 'Trewithen Blue'; Philippe Bonduel: *Eriobotrya japonica.* **195 GAP Photos:** John Glover: *Ampelopsis brevipedunculata* 'Elegans'. **Garden World Images:** *Araujia sericifera, Jasminum mesnyi;* Geoff Kidd: *Araujia sericifera;* Trevor Sims: *Hydrangea anomala* subsp. *petiolaris.* **196 Garden World Images:** Trevor Sims: *Hydrangea seemannii;* Lee Thomas: *Jasminum officinale* f. *affine.* **Science Photo Library (SPL)**: Bob Gibbons: *Hydrangea serratifolia.* **The Garden Collection:** Andrew Lawson: *Trachelospermum asiaticum.* **197 Dorling Kindersley**: Mark Winwood/RHS Wisley: *Dregea sinensis.* **Alamy:** Holmes Garden Photos: *Prostanthera cuneata.* **GAP Photos:** Geoff Kidd: *Tasmannia lanceolata.* **Garden World Images:** *Anredera cordifolia;* Gilles Delacroix: *Schizophragma hydrangeoides.* **198 Dorling Kindersley**: Brian North/RHS Chelsea Flower Show: THE COUNTESS OF WESSEX ('Evipo073'); *C.* 'Kaiu'. **GAP Photos:** Fiona Lea: *Clematis* 'Avalanche'; J S Sira: *C. cartmannii* 'Joe'. **Garden World Images:** Trevor Sims: *C.* 'Andromeda'; Lee Thomas: *C.* 'Avalanche', *C.* 'Early Sensation', *C.* ARCTIC QUEEN, *C. cartmannii* 'Joe'. **Photolibrary:** Ron Evans: *C. montana;* Abbe Green-Armytage: *C.* 'Guernsey Cream'. **199 GAP Photos:** Martin Hughes-Jones: *C.* 'Barbara Jackman'. **Garden World Images:** R Coates: *C.* 'Jacqueline du Pré'; C Lavis-Jones: *C.* 'Barbara Dibley'; B Stojanovic: *C.* 'Corona'. **Photolibrary:** Howard Rice: *C.* 'Jan Lindmark'. **Raymond Evison:** *C.* CHANTILLY, *C. florida* PISTACHIO ('Evirida'), *C.* VIENNETTA, **Dorling Kindersley:** Mark Winwood/RHS Wisley: HAPPY BIRTHDAY ('Zohapbi'). **200 Alamy:** John Glover: *C.* 'Abundance'. **GAP Photos:** Mark Bolton: *C.* 'Silver Moon'. **Garden World Images:** Floramedia: *C.* 'Columella', *C.* 'Frankie'; C Lavis-Jones: *C.* 'Kardynał Wyszynski'; MAP/A Descat: *C.* 'Black Prince'; MAP/N Pasquel: *C.* 'Abundance', *C.* 'Betty Corning'. **Raymond Evison:** *C.* AVANT-GARDE, *C.* BOURBON, *C.* ROSEMOOR, *C.* VINO. **The Garden Collection:** Torie Chugg: *C.* 'Betty Corning'. **Dorling Kindersley:** Mark Winwood/RHS Wisley: *C.* 'Perle d'Azur'. **201 Photos Horticultural:** *Lathyrus odoratus* 'Mrs Bernard Jones'. **Photolibrary:** Anne Green-Armytage: *Jasminum* x *stephanense.* **Alamy:** Niall McDiarmid: *Bomarea edulis.* **202 Garden World Images:** *Ipomoea lobata.* **Getty:** Ron Evans: *Lapageria rosea;* Leroy Simon: *Ipomoea quamoclit.* **203 Alamy:** Holmes Garden Photos: *Callistemon subulatus;* Martin Hughes-Jones: *Desfontainia spinosa.* **Garden World Images:** *Callistemon citrinus* 'Splendens'; Trevor Sims: *Cestrum* 'Newellii'. **Photolibrary:** J S Sira: *Campsis grandiflora.* **204 GAP Photos:** Geoff Kidd: *Aconitum hemsleyanum.* **Garden World Images:** *Cobaea scandens;* Trevor Sims: *Akebia trifoliata.* **Marianne Majerus Garden Images:** Andrew Lawson: *Passiflora caerulea.* **205 Alamy Images:** Frank Paul: *Wisteria frutescens* 'Amethyst Falls'. **Royal Horticultural Society (RHS)**: Graham Titchmarsh: *Ceanothus* 'Burkwoodii'. **GAP Photos:** Richard Bloom: *Ceanothus* 'Puget Blue'; Neil Holmes: *Plumbago auriculata;* Martin Hughes-Jones: *Wisteria frutescens* 'Longwood Purple'. **Garden World Images:** MAP/Arnaud Descat: *Wisteria floribunda* 'Yae kokoryu'; John Martin: *Wisteria sinensis* 'Prolific'. **Photolibrary:** Jerry Pavia: *Wisteria frutescens;* Mark Turner: *Wisteria floribunda* f. *rosea* 'Hon-beni'. **206 GAP Photos:** John Glover: *Fremontodendron* 'California Glory'; Martin Hughes-Jones: *Campsis radicans* f. *flava;* Geoff Kidd: *Hypericum* 'Rowallane'; Howard Rice: *Jasminum humile* 'Revolutum'. **Garden World Images:** *Piptanthus nepalensis.* **207 Alamy:** Martin Hughes-Jones: *Lonicera periclymenum* 'Red Gables'. **GAP Photos:** Howard Rice: *Lonicera etrusca* 'Michael Rosse'. **Garden World Images:** MAP/Arnaud Descat: *Lonicera henryi.* **Photolibrary:** Kate Boykin: *Lonicera sempervirens;* Howard Rice: *Lonicera etrusca* 'Superba'. **208 Alamy: Garden World Images:** *Jasminum polyanthum*; Lee Thomas: *Vitis* 'Brant'. **Marianne Majerus Garden Images:** Marianne Majerus: *Campsis* x *tagliabuana* 'Madame Galen'. **Photolibrary:** Howard Rice: *Campsis radicans* 'Flamenco'. **210 Alamy:** Andrea Jones: *Ampelopsis megalophylla.* **211 Alamy:** John Glover: *Acacia dealbata.* **Garden World Images:** Martin Hughes-Jones: *Garrya elliptica* 'James Roof'. **212-213 GAP Photos:** Elke Borkowski. **213 GAP Photos:** Lynn Keddie (tl); Clive Nichols (tr); Howard Rice (ftl); Visions (ftr). **214 GAP Photos:** Richard Bloom (crb); Howard Rice (bl). **215 GAP Photos:** John Glover (bc/metal spirals). **216 GAP Photos:** Geoff Kidd: *Impatiens tinctoria;* Rob Whitworth: *Sanguisorba tenuifolia* var. *alba.* **Garden World Images:** Derek Gould: *Artemisia lactiflora.* **217 GAP Photos:** Mark Bolton: *Delphinium* 'Red Caroline'. **Photolibrary:** Paroli Galperti: *Delphinium* 'Cliveden Beauty'; J S Sira/GPL: *Delphinium* 'Elizabeth Cook.' **218 Garden World Images:** Martin Hughes-Jones: *Thalictrum* 'Elin'. **Dorling Kindersley**: Mark Winwood/Temple Newsam Estate, Leeds City Council: *Delphinium* 'Kestrel'. **Alamy:** John Glover: *Meconopsis paniculata.* **Dr Evelyn Stevens:** *M. grandis*; Plant Heritage National Plant Collection: *M.* George Sherriff Group 'Jimmy Bayne', *M.* 'Marit', *M. baileyi* var. *alba, M.* x *cookei* 'Old Rose'. **GAP Photos:** Leigh Clapp: *M.* 'Lingholm'; Fiona Lea: *Galega* x *hartlandii* 'Lady Wilson'; Howard Rice: *M.* 'Slieve Donard'. **Photolibrary:** Howard Rice: *Meconopsis* 'Crewdson Hybrid'. **219 Alamy:** Florapix: *Ligularia* 'The Rocket'; John Glover: *Musa basjoo.* **Photoshot:** Photos Horticultural: *Acanthus mollis* 'Hollard's Gold'. **220 Eric Crichton Photos:** *Anemone* x *hybrida* 'Honorine Jobert'. **GAP Photos:** Victoria Firmston: *Veronicastrum virginicum* 'Fascination'. **Marianne Majerus Garden Images:** Marianne Majerus: *Hedychium* 'Tara'. **Photoshot:** Photos Horticultural: *Eremurus* x *isabellinus* 'Cleopatra'. **221 Alamy:** WILDLIFE GmbH: *Echinacea paradoxa.* **GAP Photos:** Visions: *Eupatorium maculatum* 'Riesenschirm'. **Garden World Images:** *Salvia involucrata* 'Bethellii'; *E. purpurea* 'Doubledecker', *E. purpurea* 'Fragrant Angel'; G Delacroix: *E.* 'Harvest Moon'; G. Delacroix: *E. purpurea* 'Coconut Lime', *E. purpurea* 'Fragrant Angel', *E. purpurea* 'Sundown'; J Spears: *E. purpurea* 'Doubledecker'. **Photolibrary:** Cubo Images: *E. purpurea* 'Magnus'; Antonio Molero: *E. angustifolia;* J S Sira: *E. purpurea* 'Razzmatazz'. **222 Dorling Kindersley:** Mark Winwood/RHS Chelsea Flower Show 2014: *Anemone* x *hybrida* 'Robustissima'; Mark Winwood/RHS Wisley: *A.* x *hybrida* 'September Charm'; *A.* x *hybrida* 'Whirlwind'. **GAP Photos:** J S Sira: *A. hupehensis* 'Bowles's Pink'. **Garden World Images:** L Thomas: *A. hupehensis* 'Praecox'. **Photolibrary:** Paroli Galperti: *A.* x *hybrida* 'Whirlwind'; J S Sira: *A. hupehensis* var. *japonica* 'Pamina'; Richard Surman: *A.* x *hybrida* 'Königin Charlotte'; Mark Turner: *A.* x *hybrida* 'September Charm'. **Royal Horticultural Society (RHS)**: *A. hupehensis* var. *japonica* 'Bressingham Glow'. **The Garden Collection:** Andrew Lawson: *Helianthus* 'Lemon Queen'. **Alamy:** Steffen Hauser/botanikfoto: *Helianthus salicifolius.* **223 Alamy:** Zena Elea: *Diascia personata.* **Garden World Images:** *Aquilegia vulgaris* var. *stellata* 'Black Barlow'. **224 Alamy:** John Glover: *Iris* 'Deep Black'. **British Iris Society:** *Iris. japonica.* **GAP Photos:** Jonathan Buckley: *Iris* 'Green Spot'. **Dorling Kindersley:** Mark Winwood/ RHS Wisley: *I. hoogiana; I.* 'Jane Phillips'. **Picturesmiths Ltd.**: *I.* 'English Cottage', *I.*'Frost and Flame', *I.ensata* 'Moonlight Waves', *I. germanica* 'Florentina', *I. orientalis, I.sanguinea* 'Snow Queen'. **225 Dorling Kindersley:** Mark Winwood/RHS Chelsea Flower Show 2014: *I.* 'Black Tie Affair'; Mark Winwood /RHS Wisley: *I. unguicularis* 'Mary Barnard'. **Alamy:** Holmes Garden Photos: *I.* 'Berlin Tiger'. **GAP Photos:** Richard Bloom: *I.foetidissima;* S & O: *I.*'Holden Clough'. **Garden World Images:** *I. winogradowii.* **Picturesmiths Ltd:** *I.* 'Kent Pride', *I.*'Perry's Blue', *I.*'Tropic Night', *I.sibirica* 'Soft Blue'. **226 Andrew Lawson Digital:** *Aquilegia viridiflora.* **Anne Green-Armytage:** *A. vulgaris* 'William Guiness'. **Garden World Images:** *A.* 'Dragonfly'; *A.* 'Hensol Harebell'; *A.coerulea; A. flabellata* var. *pumila;* Brian Gadsby: *A.triternata;* S Hauser; *A.coerulea;* MAP/A Descat: *A.Songbird Series* 'Bunting'; T Schilling: *A.*'Hensol Harebell'; Darren Warner: *A.*'Dragonfly'. **John Glover:** *A.canadensis.* **Photolibrary:** Tracey Rich: *A. vulgaris* var. *stellata* 'Nora Barlow'. **Thompson & Morgan:** *A. chrysantha.* **Dorling Kindersley:** Mark Winwood/*RHS Wisley: A. longissima.* **227 Garden World Images:** *Doronicum* 'Miss Mason'. **228 GAP Photos:** S & O: *Paeonia suffruticosa* 'Hakuo-jisi'; Rob Whitworth: *P.* 'Coral Charm'. **Garden World Images:** *P. lactiflora* 'Cheddar Gold', *P. lactiflora* 'Festiva Maxima', *P. lactiflora* 'Jan van Leeuwen', *P. obovata var. alba;* S Chesterman: *P.* 'Cheddar Gold'; C Harris: *P.* 'Jan van Leeuwen'; T Jennings: *P.* 'Festiva Maxima'. **Marianne Majerus Garden Images:** Marianne Majerus: *P.* x *suffruticosa* 'Yachiyo-tsubaki'; Marianne Majerus/The Manor, Hemingford Grey: *P. lactiflora* 'Lady Alexandra Duff'. **Photolibrary:** Martin Page: *P. lactiflora* 'Pillow Talk'. **229 Alamy:** Ros Drinkwater: *P.* x *lemoinei* 'High Noon'. **Collection & Photo Riviere (France, 26 Drôme)**: *P.* x *lemoinei* 'L'Espérance'. **GAP Photos:** Visions: *P.*'Félix Crousse'; Rob Whitworth: *P. suffruticosa* 'Rimpo'. **Garden World Images:** L Thomas: *P.* 'Paul M. Wild'. **Getty:** Martin Page: *P.* 'Bartzella', *P.* 'Garden Treasure'. **Marianne Majerus Garden Images:** Marianne Majerus: *P.* 'Claire de Lune'. **Photolibrary:** Martin Page: *P.* 'Buckeye Belle'; **Dorling Kindersley:** Mark Winwood, Courtesy of RHS Wisley: *P. delavayi* var. *delavayi f. lutea.* **230 GAP Photos:** Suzie Gibbons: *Selinum wallichianum.* **Garden World Images:** Gilles Delacroix: *Leucanthemum* x *superbum* 'Aglaia'. **231 GAP Photos:** Jo Whitworth: *Anaphalis triplinervis* 'Sommerschnee'; Rob Whitworth: *Gaura lindheimeri* . **Garden World Images:** Lee Thomas: *Leucanthemum* x *superbum* 'Sonnenschein'. **232 Alamy:** CuboImages: *Astilbe* 'Europa'; John Glover: *A.* 'Amethyst'; Steffen Hauser/botanikfoto: *A.* 'Granat'; Martin Hughes-Jones: *A.* 'Europa'. **Garden World Images:** G Delacroix: *A.* 'Deutschland'; M Thornhill: *A.* x *crispa* 'Perkeo'. **233 Marianne Majerus Garden Images:** Marianne Majerus: *Thalictrum aquilegiifolium* 'Thundercloud'. **234 GAP Photos:** Richard Bloom: *Persicaria campanulata* 'Rosenrot'. **Garden World Images:** *P. microcephala* 'Red Dragon', *P. virginiana* var. *filiformis* 'Lance Corporal', *P. virginiana* 'Painter's Palette', *Rehmannia elata;* M Hughes-Jones: *P. microcephala* 'Red Dragon'; T Sims: *P. virginiana* var. *filiformis* 'Lance Corporal', *P. virginiana* 'Painter's Palette'. **Getty:** Dave Zubraski: *P. affinis* 'Superba'. **Photolibrary:**

Carole Drake/GPL: *P. alpina*. **235 Garden World Images:** *Phlox paniculata* 'Prince of Orange'; Rodger Tamblyn: *Lychnis chalcedonica*. **236 Dorling Kindersley**: Mark Winwood/RHS Wisley: *Penstemon* 'Hidcote Pink' **Photolibrary:** J S Sira: *Penstemon* 'The Juggler'. **237 bloompictures:** *P.* 'Chester Scarlet', 'King George V'. **Garden World Images:** *P.* 'Papal Purple', *P.* 'Russian River'; G. Delacroix: *P.* 'Cherry'; Derek Gould:*P.* 'Russian River'. **Photolibrary:** Chris Burrows: *P. whippleanus*. **Dorling Kindersley**: Mark Winwood/RHS Wisley: *P. heterophyllis* 'Heavenly Blue'. **238 Alamy:** Holmes Garden Photos: *Astrantia major* 'Ruby Wedding'; **Garden World Images:** M Hughes-Jones: *Papaver* Orientale Group 'Karine'; MAP/A Descat: *P.* 'Patty's Plum'; L Thomas: *P* 'Medallion' **Marianne Majerus Garden Images:** Marianne Majerus, Bankton Cottage, Sussex: *Geranium palmatum*. **Photolibrary:** John Glover: *Papaver* Oriental Group 'Turkish Delight'; Hermant Jariwala/GPL: *P. orientale* var. *bracteatum*. **239 Alamy:** blickwinkel: *Linaria triornithophora*. **240 Alamy:** Shorelark Nigel Downer: *Eryngium alpinum*. **GAP Photos:** Mark Bolton: *Nepeta* 'Six Hills Giant'. **Garden World Images:** *Agapanthus inapertus* subsp. *pendulus* 'Graskop', *Phlox paniculata* 'Windsor'; Martin Hughes-Jones: *Agapanthus inapertus* subsp. *pendulus* 'Graskop'. **John Glover:** *Phlox paniculata* 'Hampton Court'. **Science Photo Library (SPL)**: A-Z Botanical Collection: *Phlox paniculata* 'Amethyst'. **241 Alamy:** Holmes Garden Photos: *Campanula persicifolia* 'Chettle Charm'; imagebroker: *Echinops bannaticus* 'Taplow Blue'. **Dorling Kindersley:** Mark Winwood/RHS Wisley: *Agapanthus* 'Northern Star; *A* 'Purple Cloud' **Garden World Images:** G Delacroix: *Campanula takesimana;* M Hughes-Jones: *C. lactiflora* 'Prichard's Variety'; P Smith: *C. punctata* f. *rubriflora* 'Cherry Bells'; L Thomas: *C. trachelium* 'Bernice'; Lee Thomas: *Aconitum* 'Stainless Steel'. **242 GAP Photos:** Jonathan Buckley: *Astelia chathamica*. **Marianne Majerus Garden Images:** Marianne Majerus, The Old Vicarage, East Ruston: *Mathiasella bupleuroides* 'Green Dream'. **243 GAP Photos:** Flora Press: *Gentiana lutea;* Martin Hughes-Jones: *Berkheya macrocephala*. **GardenPhotos.com:** Judy White: *Phlomis russeliana*. **244 bloompictures:** *Hemerocallis* 'Cherry Cheeks'. **GAP Photos:** Clive Nichols: *H.* 'Pardon Me'. **Garden Picture Library:** J S Sira: *H.* 'Neyron Rose'. **Garden World Images:** *H.* 'Prairie Blue Eyes'; G Delacroix: *H.* 'Luxury Lace'; L Thomas: *H.* 'Canadian Border Patrol'. **The Garden Collection:** Derek Harris: *H.* 'Stoke Poges'. **245 bloompictures:** *H.* 'Cream Drop'. **Dorling Kindersley**: Mark Winwood/RHS Wisley: *H. dumortieri*. **GAP Photos:** Adrian Bloom: *H.* 'Whichford'; Martin Hughes-Jones: *H.* 'Cathy's Sunset'. **Garden Picture Library:** C Burrows: *H.* 'Little Wine Cup'. **Garden World Images:** T Jennings: *H.* Chicago Sunrise'. **Peter Stiles Photography:** *H.* 'Cartwheels'. **The Garden Collection:** Andrew Lawson: *H.* 'Bonanza'; Nicola Stocken Tomkins: *H.* 'Black Magic'. **246 Alamy:** Holmes Garden Photos: *Euphorbia griffithii* 'Fireglow'. **Garden World Images:** Martin Hughes-Jones: *Verbascum* 'Cotswold Beauty'. **247 Alamy:** Holmes Garden Photos: *Achillea ptarmica* 'The Pearl'. **GAP Photos:** Lynn Keddie: *A.* 'Belle Epoque'; J S Sira: *A.* 'Christine's Pink'. **Garden World Images:** A Biddle: *A.* 'Lachsschönheit'; N R Colborn: *A.* 'Heidi'; G. Delacroix: *A. millefolium* 'Red Velvet'; L Thomas: *A.* 'Terracotta'. **Getty:** Martin Page: *A. filipendulina* 'Parker's Variety'. **248 Alamy:** Steffen Hauser/botanikfoto: *Helenium* 'Feuersiegel'; Martin Hughes-Jones: *H.* 'Potter's Wheel'; Leonie Lambert: *Lobelia cardinalis* 'Queen Victoria. **Garden World Images:** G. Delacroix: *H.* 'Waltraut'; G Harper: *H.* 'Indianersommer'; M Hughes-Jones: *H.* 'Double Trouble', *H* 'Red Army', *H.* 'Rubinzwerg'. **Photolibrary:** Neil Holmes: *H* 'Butterpat.' **249 Alamy:** John Martin: *Symphyotrichum* 'Photograph'. **Garden World Images:** G. Delacroix: *Aster* x *frikartii* 'Wunder von Stäfa'; MAP/A Descat: *S.novae-angliae* 'Rosa Sieger'; T Sims: *S. novi-belgii* 'Carnival'. **GardenPhotos.com:** Graham Rice: *S.* 'Sunhelene'. **Getty:** Rob Whitworth: *S. novi-belgii* 'Chequers'. **Photolibrary:** Mark Bolton: *S.* 'Little Carlow', *S. novae-angliae* 'Violetta'; Sunniva Harte: *S.* 'Coombe Fishacre'. **250 Alamy:** Carole Drake: *Salvia glutinosa*. **GAP Photos:** Richard Bloom: *S. nemorosa* 'Ostfriesland'; Jonathan Buckley: *S. guaranitica* 'Black and Blue'; Heather Edwards: *S. patens;* John Glover: *S. verticillata* 'Purple Rain'; Marcus Harpur: *S. nemorosa* 'Lubecca'; Neil Holmes: *S.* x *sylvestris* 'Blauhügel'. **Garden World Images:** Gilles Delacroix: *S. argentea, S. nemorosa* 'Caradonna', *S. pratensis* 'Indigo', *S. pratensis* 'Swan Lake'; Martin Hughes-Jones: *S. pratensis* 'Pink Delight'. **Marianne Majerus Garden Images:** Marianne Majerus: *S. nemorosa* 'Amethyst'. **Photolibrary:** Ron Evans: *S.* x *sylvestris* 'Mainacht'. **Dorling Kindersley**: Mark Winwood/Lullingstone Castle, Kent: *S. guaranitica* 'Black and Blue'. **251 Photolibrary:** Brian Carter: *Solidago* 'Goldenmosa'. **Alamy:** blickwinkel: *Rudbeckia fulgida* var. *speciosa;* Organica: *R. triloba*. **The Garden Picture Library**: *R. occidentalis* 'Green Wizard'. **GAP Photos:** Richard Bloom: *R. maxima*. **Garden World Images:** *R. fulgida* var. *deamii, R. laciniata* 'Herbstsonne'. **Dorling Kindersley**: Mark Winwood/RHS Wisley: *R. laciniata* 'Herbstsonne'; *R. fulgida* var.*deamii*. **252 Garden World Images:** M Hughes-Jones: *Chrysanthemum* 'Innocence'; J Need: *C.* CHESAPEAKE. **GardenPhotos.com:** Graham Rice: *C.* 'Emperor of China', *C.* 'Nell Gwynn', *C.* 'Purleigh White', *C.* 'Spartan Seagull'. **Dorling Kindersley:** Woottens Plants: *C.* Aunt Millicent. **253 Alamy:** Martin Hughes-Jones: *Chrysanthemum* 'Duchess of Edinburgh'. **GAP Photos:** Richard Bloom: *C.* 'Cottage Apricot'; Howard Rice: *C.* 'Mary Stoker'. **Garden World Images:** *C.* 'Apollo', *C.* 'Nantyderry Sunshine', *C.* 'Tapestry Rose'; R Coates: *C.*'Ruby Mound'; R Ditchfield: *C.* 'Doctor Tom Parr'; G Harper: *C.* 'Nantyderry Sunshine'; MAP/A Kubacsi: *C.* 'Apollo'. **Dorling Kindersley:** Woottens Plants: *C* 'Chelsea Physic Garden'. **Garden Photos.com:** Graham Rice: *C.* 'Bronze Elegance', *C.*'Grandchild', *C.*'Perry's Peach', *C.* 'Sea Urchin'. **Marianne Majerus Garden Images:** Marianne Majerus/NCCPG National Plant Collection: *C.* 'Mrs Jessie Cooper', *C.* 'Paul Boissier', *C.* 'Rumpelstilzchen'. **Photoshot:** Photos Horticultural: *C.*'Anastasia'. **Royal Horticultural Society (RHS)**: Ali Cundy: *C.* 'Carmine Blush'. **254 Garden World Images:** *Kniphofia*. 'Royal Standard', *K. caulescens;* G Delacroix: *K.* 'Royal Standard'; D Gould: *K.* 'Prince Igor'; MAP/N Pasquel: *K.* 'Green Jade'; T Sandell: *K.* 'Toffee Nosed'. **Photolibrary:** Chris Burrows/GPL: *K.* 'Bees' Sunset'; Howard Rice/GPL: *K. rooperi*. **Dorling Kindersley**: Mark Winwood/RHS Wisley: *K.* 'Tawny King'. **255 Marianne Majerus Garden Images:** Marianne Majerus: *Helleborus* x *ericsmithii* 'Bob's Best'. **256 Alamy:** GardenPhotos.com: *Cypripedium* Ulla Silkens gx; Martin Hughes-Jones: *Geranium macrorrhizum* 'Ingwersen's Variety'. **GAP Photos:** Andrea Jones: *Chrysosplenium macrophyllum;* **Marianne Majerus Garden Images:** Marianne Majerus/Emile Becker: *Helleborus thibetanus*. **Photolibrary:** Clive Nichols: *Bergenia* 'Beethoven'. **257 Alamy:** John Glover: *Primula* 'Guinevere', *P.* 'Woodland Walk'; June Green: *P.* Husky Series [white]. **GAP Photos:** J S Sira: *P. sieboldii* 'Geisha Girl'. **Garden World Images:** T Sims: *P.* 'Lady Greer'; D Wildridge: *P.* 'Dawn Ansell', *P. vialii*. **Dorling Kindersley**: John Glover/RHS Garden, Wisley: *P.* japonica 'Miller's Crimson'. **258 Alamy:** John Glover: *Primula* 'Elizabeth Killelay'. **GAP Photos:** Visions: *Primula* 'Don Keefe'. **Garden World Images:** *Primula* 'Belarina Cobalt Blue', *Primula* 'Mark' [Auricula]; L Thomas: *P.* Belarina Series 'Belarina Cobalt Blue'. **Photolibrary:** Sunniva Harte: *P.* Crescendo Series 'Crescendo Bright Red'. **259 Garden World Images:** M Hughes-Jones: *Primula* 'Fransisca'. **Photolibrary:** Sunniva Harte: *Primula veris* 'Katy McSparron'. **Picturesmiths Ltd:** R. Smith: *Primula* 'Trouble'. **260 Alamy:** Florapix: *Lathyrus vernus*. **Garden World Images:** *Glaucidium palmatum;* Dr Alan Beaumont: *Lathraea clandestina*. **The Garden Collection:** Nicola Stocken Tomkins: *Epimedium epsteinii*. **261 Alamy:** Martin Hughes-Jones: *Brunnera macrophylla* 'Jack Frost'. **GAP Photos:** Heather Edwards: *Pulmonaria* 'Mawson's Blue'. **Garden World Images:** G Delacroix: *Pulmonaria* 'Margery Fish', *P.* 'Excalibur'; MAP/A Descat: *P.* 'Mary Mottram'; L Thomas: *P.* OPAL ('Ocupal') **Getty:** Martin Page: *Mertensia virginica*. **Photolibrary:** John Glover /GPL: *Pulmonaria rubra* 'David Ward'; Howard Rice/GPL: *P. rubra*. **Dorling Kindersley**: Mark Winwood/RHS Wisley: *P. 'Lewis Palmer'*. **262 GAP Photos:** Richard Bloom: *Helleborus argutifolius* 'Silver Lace'; Martin Hughes-Jones: *Euphorbia amygdaloides* var. *robbiae*. **Photolibrary:** Howard Rice: *Valeriana phu* 'Aurea'. **263 Alamy:** The Garden Picture Library: *Doronicum orientale* 'Magnificum'. **Garden World Images:** *Leucanthemum* x *superbum* 'Esther Read'; N R Colborn: *Epimedium* 'Amber Queen'. **264 Photolibrary:** Joshua McCullough: *Deinanthe bifida*. **Photos Horticultural:** *Diplarrhena moraea*. **265 Eric Crichton Photos:** *Osteospermum jucundum*. **Photolibrary:** Rex Butcher: *Dactylorhiza foliosa*. **Science Photo Library (SPL)**: A-Z Botanical Collection: *Lychnis viscaria* 'Splendens Plena'. **266 Alamy:** The Garden Picture Library: *Dianthus* 'Inchmery'. **Garden World Images:** T Sims: *Dianthus* 'Cranmere Pool'; L Thomas: *D.* 'Devon Dove', *D.* 'Devon Flavia'. **GardenPhotos.com:** Graham Rice: *D.*'Brilliant Star', *D.* 'Evening Star'. **Royal Horticultural Society (RHS)**: Sue Drew: *D.*'Milky Way'. **267 Alamy:** Christopher Burrows: *D. superbus* 'Crimsonia'; Glenn Harper: *D.* 'Neon Star'. **Allwoods Nursery:** *D.* 'Tayside Red'. **Garden World Images:** *D.*'Devon Wizard', *D.* 'Fusilier',*D.* 'Monica Wyatt', *D.* 'Moulin Rouge', *D.*PASSION ('WpPassion'), *D.* 'Pixie Star', *D.* 'Rose de Mai',*D.* 'Valda Wyatt', *D.* 'Devon Wizard', *D.* STARLIGHT; R Coates: *D.* 'Monica Wyatt'; G Delacroix: G Harper: *D.* 'Feuerhexe'; T Sims: *D.* 'Rose de Mai'; L Thomas: *D.* 'Fusilier', *D.* LILY THE PINK ('Wp05 Idare'), *D.* PASSION ('WpPassion'), *D.* 'Pixie Star', *D.* TICKLED PINK ('DevonPp11'), *D.* 'Valda Wyatt'. **GardenPhotos.com:** Graham Rice: *D.* 'India Star'. **Marianne Majerus Garden Images:** Marianne Majerus: *D.* 'Queen of Sheba'. **268 Alamy:** Christopher Burrows: *Potentilla* 'Arc-en-ciel'; CuboImages srl: *Stachys officinalis* 'Hummelo'. **Bleddyn Wynn Jones:** *Crusea coccinea*. **Photolibrary:** Richard Bloom: *Geum* 'Bell Bank'. **Photoshot:** Photos Horticultural: *Coreopsis* 'Limerock Ruby'. **269 GAP Photos:** Jonathan Buckley: *Berkheya purpurea*. **Garden World Images:** Tony Schilling: *Ourisia coccinea*. **270 Dorling Kindersley:** Steve Hamilton/Hidcote Manor Garden, Chipping Campden, Gloucestershire: *Geranium* himalayense. **271 Alamy:** CuboImages srl: *Geranium* ROZANNE ('Gerwat'); **Garden World Images:** *Myosotidium hortensia*. **272 Alamy:** Ros Drinkwater: *Hosta* 'Invincible'; Holmes Garden Photos: *H.* 'June'. **GAP Photos:** Dave Bevan: *H.* 'Gold Edger'; Clive Nichols: *H.* 'Night Before Christmas'. **Garden World Images:** L Thomas: *H.* 'Minuteman'. **GardenPhotos.com:** judywhite: *H.* 'Cherry Berry'. **273 GAP Photos:** Jo Whitworth: *H. lancifolia*. **Garden World Images:** G Delacroix: *H.* 'Fragrant Bouquet '; Ellen McKnight: *H.*'Sagae'. **Photoshot:** Photos Horticultural: *H.* 'Remember Me', *H.* 'Revolution'. **The Garden Collection:** Torie Chugg: *H.*'Tattoo'. **274 Alamy:** John Glover: *Mentha suaveolens* 'Variegata'. **GAP Photos:** Neil Holmes: *Artemisia ludoviciana* 'Valerie Finnis'. **Garden World Images:** *Hosta tokudama* f. *aureonebulosa*. **275 Alamy:** blickwinkel: *Alchemilla conjuncta*. **Rosemary Kautzky:** photographersdirect.com: *Calanthe striata*. **277 Alamy:** Holmes Garden Photos: *Hieracium lanatum*. **GAP Photos:** Visions: *Gaillardia* x *grandifl ora* 'Oranges and Lemons'. **Garden World Images:** Richard Shiell: *Libertia ixioides* 'Goldfinger'. **278 Alamy:** The Garden Picture Library: *Astrantia maxima*. **GAP Photos:** J S Sira: *Astrantia* 'Roma'. **John Fielding:** *Begonia taliensis*. **Marianne Majerus Garden Images:** Marianne Majerus: *Begonia grandis* subsp. *grandis*. **279**: **Garden World Images:** N Appleby: *Hylotelephium* 'Matrona'; L Every: *H. telephium* Atropurpureum group 'Purple Emperor'; D Gould: *H. spectabile* 'Iceberg'; G Harper: *H. telephium* subsp. maximum 'Gooseberry Fool'; L Thomas: *H. erythrostictum* 'Mediovariegatum'. **Marianne Majerus Garden Images:** Marianne Majerus: *H.* 'Red Cauli'. **Photolibrary:** Mark Bolton: *H.* 'Ruby Glow'. **Dorling Kindersley**: Mark Winwood/RHS Wisley: *H. telephium* 'Strawberries and Cream', *H.* 'Herbstfreude'. **280 Alamy:** John Glover: *Heuchera* 'Plum Pudding'. **GAP Photos:** Martin Hughes-Jones: *Agastache* 'Black Adder', *Geranium* 'Orion'. **Garden World Images:** *Tulbaghia violacea;* Gilles Delacroix: *Bergenia purpurascens*. **281 GAP Photos:** FhF Greenmedia: *Helleborus niger* 'HGC Joseph Lemper'; John Glover: *Helleborus* x *hybridus Harvington hybrids* [single, white]; Marcus Harpur: *Helleborus* x *hybridus Bradfield hybrids* [double, apricot with spots]; Howard Rice: *Helleborus* x *hybridus* [single, apricot]. **Garden World Images:** L Thomas: *Helleborus* x *nigercors*. **GardenPhotos.com:** Graham Rice: *H.* x *hybridus* [single, white with spots]. **Getty:** Richard Bloom: *H.* x *hybridus* [double, slate]; Jonathan Buckley: *H.* x *hybridus Ashwood Garden hybrids* [double, pink]; Dave Zubraski: *H.* x *hybridus* [single, yellow with spots]. **Marianne Majerus Garden Images:** Marianne Majerus/The Old Rectory, Sudborough: *H.* x *hybridus* [single, yellow]. **Peter Stiles Photography:** *H.* x *hybridus* [single, red]. **Photolibrary:** Clive Nichols /GPL: *H.* x *hybridus* Harvington hybrids [double, apricot]; Garden Pix Ltd/GPL: *H.* x *hybridus* Ashwood Garden hybrids [double, pink]; Anne Green-Armytage/GPL: *H.* x *hybridus* [double, white]; Howard Rice: *H.* x *hybridus* [single, green]; Howard Rice/GPL: *H.* x *hybridus* [double, plum]. **The Garden Collection:** Nicola Stocken Tomkins: *H.* x *hybridus* [double, white with spots]. **282 GAP Photos:** Jonathan Buckley: *Heuchera* 'Silver Scrolls'; Lynn Keddie: *H.* 'Peppermint Spice'; Visions Premium: *H.*'Ginger Ale'; Rob Whitworth: *H.* 'Ebony and Ivory', **Dorling Kindersley**: Mark Winwood /RHS Chelsea Flower Show 2014: *H.* 'Southern Comfort'. **Garden World Images:** Rita Coates: *H.* 'Midnight Rose'; G Delacroix: *H.* 'Purple Petticoats', *H. sanguinea* 'Snow Storm', x *Heucherella tiarelloides* 'Stoplight'; G. Delacroix: *H.* 'Lime Rickey'; Richard Shiell: *H.*Amber Waves'; L Thomas: *H.* 'Beauty Colour', *H.* 'Blackbird', *H.* 'Can-can', *H.* 'Georgia Peach', *H.* 'Green Spice', *H.* 'Peach Flambé', *H.* 'Tiramisu', *H.* CRÈME BRÛLÉE, x *Heucherella tiarelloides* 'Kimono'; D Wildridge: *Heuchera* 'Pewter Moon'. **GardenPhotos.com:** Graham Rice: *H.* 'Cinnabar Silver'. **Getty:** Jo Whitworth: *H.* 'Chocolate Ruffles'. **283 Alamy:** John Glover: *Helleborus foetidus* Wester Flisk Group. **GAP Photos:** Geoff Kidd: *Ophiopogon japonicus;* Howard Rice: *Helleborus odorus*. **Garden World Images:** Gilles Delacroix: *Dianella caerulea* CASSA BLUE. **Marianne Majerus Garden Images:** Marianne Majerus/Harveys Garden Plants: *Helleborus* x *sternii* 'Boughton Beauty'. **284 GAP Photos:** Mark Bolton: *Cortaderia richardii*. **Garden World Images:** Gilles Delacroix: *Calamagrostis brachytricha*. **285 Alamy:** The Garden Picture Library: *Miscanthus sinensis* 'Yakushima Dwarf'. **GAP Photos:** Ron Evans: *Chionochloa rubra;* Jo Whitworth, location: Knoll Gardens: *Eragrostis curvula* 'Totnes Burgandy'. **286 GAP Photos:** Carole Drake, courtesy The Sir Harold Hillier Gardens/Hampshire County Council: *Thamnocalamus crassinodus* var. *spathiflorus* 'Kew Beauty'. **GardenPhotos.com:** judywhite: *Miscanthus sinensis* 'Gracillimus'. **Getty:** Richard Bloom: *Miscanthus sinensis* 'Flamingo'; Rob Whitworth: *Stipa calamagrostis*. **Photolibrary:** Stephen Henderson: *Molinia caerulea* subsp. *arundinacea* 'Transparent'. **287 Alamy:** Holmes Garden Photos: *Chimonobambusa timidissinoda*. **GAP Photos:** Howard Rice: *Ampelodesmos mauritanica*. **288 Alamy:** Holmes Garden Photos: *Yushania anceps* 'Pitt White'. **GAP Photos:** BBC Magazines Ltd: *Phyllostachys aurea*. **Photoshot:** Photos Horticultural: *Luzula sylvatica* 'Hohe Tatra'. **289 The Garden Collection:** Andrew Lawson: *Phyllostachys vivax* f. *aureocaulis*. **290 Alamy:** Debbie Monique Jolliff: *Athyrium niponicum* var. *pictum* 'Burgandy Lace'. **Garden World Images:** Lee Thomas: *Athyrium* 'Ghost'. **292 Eric Crichton Photos:** *Adiantum venustum*. **Garden World Images:** Lee Thomas: *Polystichum tsussimense*. **293 Alamy:** John Swithinbank: *Dryopteris erythrosora*. **The Garden Collection:** Torie Chugg: *Polypodium cambricum* 'Richard Kayse'. **294-295 GAP Photos:** Elke Borkowski. **295 GAP Photos:** Lee Avison (ftr); John Glover (ftl); Sharon Pearson (tl); Dave Zubraski (tr). **296 GAP Photos:** Charles Hawes (t); Martin Hughes-Jones (b). **298 Garden World Images:** Anthony Baggett: *Dahlia* 'Gallery Art Fair'; G Delacroix: *Euphorbia hypericifolia* DIAMOND FROST ('Inneuphe'), *Lobularia maritima* 'Snow Crystals', *Chaenostoma cordatum* 'Snowflake,' Gilles Delacroix: *Euphorbia hypericifolia* DIAMOND FROST, R Shiell: *Zinnia* x *marylandica* Zahara Series 'Zahara Starlight Rose'; Richard Shiell: *Zinnia* x *marylandica Zahara Series* 'Zahara Starlight Rose. **299 Garden World Images:** *Eustoma grandiflorum*. **Dorling Kindersley**: John Glover/Unwins *Nicotiana* x *sanderae* Domino Series. **300 Alamy:** Martin Hughes-Jones: *Argyranthemum* 'Summer Melody'. **Garden World Images:** *Catharanthus roseus* Boa Series 'Boa Peach', *Martynia annua;* R Shiell: *Calibrachoa* Cabaret Series LIGHT PINK, *Catharanthus roseus Boa Series* 'Boa Peach'; Richard Shiell: *Calibrachoa* Calibrachoa Caberet Series LIGHT PINK, *Catharanthus roseus* Boa Series 'Boa Peach'. **Photolibrary:** Chris Burrows/GPL: *Brachyscome* 'Strawberry Mousse.' **Dorling Kindersley**: Mark Winwood/Ball Colegrave: Osteospermum VOLTAGE WHITE ('Balvowhite'). **301 Garden World Images:** N R Colborn: *Diascia* LITTLE DANCER; G Delacroix: *Lantana camara* Lucky Series LUCKY HONEY BLUSH; Trevor Sims: *Lathyrus odoratus* Cupid Series 'Cupid Pink'; L Thomas: *Nemesia* AMELIE, *Osteospermum* Sunny Series 'Sunny Marina'. **The Garden Collection:** Liz Eddison: *Gaura lindheimeri* 'Rosyjane'. **302 Garden World Images:** *Fuchsia* 'Dollar Prinzessin', *F.* 'Nellie Nuttall', *F.* 'Sunray'; MAP/N Pasquel: *F.* 'John Ridding'; P Smith: *F.* 'Sunray'. **Dorling Kindersley**: Mark Winwood/RHS Wisley: *F. magellanica* var. *gracilis* 'Aurea'. **Young Plants Limited:** Proven Winners: Chris Wright Photography: *F.* 'Joanna Lumley.' **303 GAP Photos:** Geoff Kidd: *Primula* Belarina Series BELARINA PINK ICE ('Kerbelpice'). **Dorling Kindersley**: Mark Winwood/Ball Colegrave: Petunia Easy Wave Series 'Mystic Pink'. MAP/R Shiell: x *Petchoa* Supercal Series SUPERCAL

NEON ROSE ('KAKEGAWA S89'). **Unwins Seeds Ltd:** *Gomphrena globosa*. **304 Garden World Images:** *Lobularia maritima* 'Rosie O'Day', *Schizanthus* 'Dwarf Bouquet'. **Unwins Seeds Ltd:** *Iberis umbellata* Fairy Series. **306 Dorling Kindersley**: Mark Winwood/Ball Colegrave: *Calibrachoa* Can-Can Series 'Hot Pink Star'. **Andrew Lawson Photography:** T Chugg: *Zinnia elegans* Dreamland Series [scarlet]. **GAP Photos:** Rob Whitworth: *Antirrhinum majus* 'Black Prince'. **Garden World Images:** Simon Keeble: *Brassica oleracea* Northern Lights Series; Richard Shiell: *Catharanthus roseus* Cobra Series 'Cobra Burgundy'; L Thomas: *Cuphea* 'Firecracker', *Dahlia* HAPPY SINGLE ROMEO ('HS Romeo'). **Thompson & Morgan:** *Cosmos atrosanguineus* CHOCAMOCHA. **307 Garden World Images:** Eric Crichton: *Nemesia* Carnival Mixed. **Dorling Kindersley**: Mark Winwood, Courtesy of RHS Wisley: *Pelargonium* 'Robyn Hannah'; Mark Winwood/Ball Colegrave: *Impatiens* New Guinea Divine Series. **308 Garden World Images:** *Tagetes* 'Cinnabar'. **Photoshot:** *Alonsoa warscewiczii*. **309 Chris Burrows:** *Pelargonium* Horizon Deva Series 'Horizon Deva Raspberry Ripple'. **Dorling Kindersley**: Mark Winwood/RHS Wisley: *P.* 'Attar of Roses'. **GAP Photos:** Friedrich Strauss: *P.* Antik Series ANTIK SALMON ('Tiksal'); Graham Strong: *P.* Maverick Series 'Maverick Star'. **Garden World Images:** R Coates: *P.* Regalia Series 'Regalia Chocolate'; J Spears: *P.* BLUE WONDER ('Pacbla'); L Thomas: *P.* Bullseye Series 'Bullseye Salmon', *P.* Fireworks Series FIREWORKS SCARLET ('Fiwoscarl'). **Photolibrary:** Chris Burrows/GPL: *P.* Decora Series 'Decora Dark Pink', *P.* Horizon Devas Series 'Horizon Devas Orange Ice'; Andrew Lord/GPL: *P.* 'Evka'. **310 Alamy:** WILDLIFE GmbH: *Heliotropium arborescens*. **Photolibrary:** Photos Lamontagne/GPL: *Alternanthera dentata* 'Purple Knight'. **GAP Photos:** J S Sira: *Solenostemon scutellarioides* 'Inky Fingers'. L Thomas: *Angelonia angustifolia* AngelMist Series 'AngelMist Lavender Stripe'. **311 GAP Photos:** Christina Bollen: *Lobelia erinus* Waterfall Series 'Waterfall Light Lavender'; J S Sira: *Petunia* Surfinia Series SURFINIA BLUE VEIN ('Sunsolos'), **Garden World Images:** G Delacroix: *Solenostemon* 'Chocolate Mint'; T Sims: *Dahlia* HAPPY SINGLE WINK ('HS Wink'). **The Garden Collection:** Liz Eddison: *Strobilanthes dyerinanus*. **Dorling Kindersley**: Mark Winwood/Ball Colegrave: *Petunia* Shock Wave Series 'Denim', *Osteospermum* Serenity Series 'Dark Purple'. **312 GAP Photos:** Friedrich Strauss: *Viola* x *wittrockiana* 'Sorbet Black Delight' (Sorbet Series). **Garden Picture Library:** *Cerinthe major* 'Purpurascens'. **Garden World Images:** *Nierembergia linariifolia* 'Purple Robe', *Pennisetum setaceum* 'Rubrum'. **Dorling Kindersley**: Mark Winwood/Ball Colegrave: *Petunia* Frenzy Series 'Blue Vein'. **313 GAP Photos:** Marcus Harpur: *Myosotis* Sylva Series. **Garden World Images:** *Campanula medium* 'Bells of Holland', *Salvia sclarea* var. *turkestanica, Trachelium caeruleum;* Trevor Sims: *Salvia sclarea* var. *turkestanica*. **Thompson & Morgan:** *Isotoma* Avant-Garde Series. **314 Alamy:** Anna Yu: *Salvia farinacea* 'Strata'. **Garden World Images:** Lee Thomas: *Lobelia erinus* Waterfall Series 'Waterfall Blue', *Pericallis* Senetti Series SENETTI BLUE BICOLOR ('Sunseneribuba'). **315 Alpine Garden Society:** *Cynoglossum amabile* 'Firmament'. **Garden World Images:** *Commelina coelestis, Myosotis sylvatica* 'Blue Ball'. **316 Alamy:** Christopher Burrows: *Petunia* Surfinia Series SURFINIA LIME ('Keiyeul'). **Garden World Images:** Gilles Delacroix: *Zinnia elegans* 'Envy'. **317 Alamy:** WILDLIFE GmbH: *Begonia* 'Mocha Scarlet.' **Garden World Images:** G. Delacroix: *Begonia* 'DRAGON WING RED' ('Bepared'), R Shiell: *B.* Illumination Series 'Illumination Salmon Pink', *B.* Non Stop Series 'Non-stop White'. **The Garden Collection:** Liz Eddison: *B.* BONFIRE ('Nzcone'). **Dorling Kindersley**: Mark Winwood/RHS Malvern Flower Show 2014 : *B.* 'Escargot', *B.* 'Benitochiba'. **318 Garden World Images:** MAP/Nathalie Pasquel: *Perilla* 'Magilla Vanilla'. **Photolibrary:** Stephen Henderson: *Setaria macrostachya*. **319 Eric Crichton Photos:** *Argyranthemum* 'Jamaica Primrose'. **Garden World Images:** *Brugmansia* x *candida* 'Grand Marnier'; Lee Thomas: *Duranta erecta* 'Gold Edge'. **Dorling Kindersley**: Mark Winwood/ Ball Colegrave: *Gaillardia* x *grandiflora* Mesa Series. **320 GAP Photos:** Friedrich Strauss: *Nemesia* Sunsatia Series SUNSATIA MANGO ('Inupyel'). **Photolibrary:** Photos Lamontagne/GPL: *Xerochrysum bracteatum* Sundaze Series SUNDAZE GOLD ('Redbragol'). **Thompson & Morgan:** *Rudbeckia hirta* 'Toto Gold'. **Dorling Kindersley**: Mark Winwood/Ball Colegrave *Antirrhinum majus* Liberty Classic Series 'Liberty Yellow'.

321 Thompson & Morgan: *Platystemon californicus*. **Photos Horticultural:** *Calendula officinalis* 'Daisy May'. **322 GAP Photos:** Paul Debois: *Mimulus* x *hybridus* Magic Series 'Magic Yellow Blotch'. **323 Alamy:** CuboImages srl: Gazania Daybreak Series 'Daybreak Bright Yellow'. **Garden World Images:** Trevor Sims: *Carthamus tinctorius*. **Photolibrary:** J S Sira: *Lysimachia congestiflora* 'Outback Sunset'. **324 Alamy:** Kevin Wheal Commercial: *Gazania* Kiss Series 'Kiss Orange Flame'. **Garden World Images:** *Erysimum* x *marshallii* 'Orange Bedder'. **325 Garden World Images:** *Calendula officinalis* Fiesta Gitana Group, Richard Shiell: *Impatiens* Fusion Series FUSION PEACH FROST ('Balfuspeafro'). **Dorling Kindersley:** Brian North/Thompson and Morgan: *Zinnia marylandica* Zahara Series 'Fire'. **326 Garden World Images:** Lee Thomas: *Coreopsis* 'Rum Punch'. **327 Plant Pictures World Wide:** *Eschscholzia californica* Thai Silk Series. **Dorling Kindersley:** Mark Winwood/Ball Colegrave: *Gaillardia* x *grandiflora* Arizona Series. **328-329 GAP Photos:** Christina Bollen. **329 GAP Photos:** Lee Avison (tl). **330 GAP Photos:** Elke Borkowski (r). **332 Alamy:** WILDLIFE GmbH: *Pulsatilla alpina*. **GAP Photos:** John Glover: *Cassiope tetragona*. **333 Garden World Images:** *Saxifraga* 'Tumbling Waters'. **Photolibrary:** Mark Turner: *Dodecatheon hendersonii*. **The Garden Collection:** Andrew Lawson: *Dodecatheon meadia* f. *album, Jeffersonia diphylla*. **334 Alpine Garden Society:** *Daphne* x *hendersonii* 'Blackthorn Rose'. **Garden World Images:** *Omphalodes verna*. **Photolibrary:** Harald Lange: *Pulsatilla halleri*. **Dorling Kindersley:** Mark Winwood/*RHS Malvern Flower Show 2014*: *Aquilegia alpina*. **335 Eric Crichton Photos:** *Aurinia saxatilis* 'Variegata'. **337 Clive Nichols:** *Saxifraga callosa*. **Garden World Images:** *Hebe vernicosa;* Derek Gould: *Diascia* ICE CRACKER. **338 Garden World Images:** *Rhodothamnus chamaecistus*. **The Garden Collection:** Torie Chugg: *Oxalis tetraphylla*. **339 Alpine Garden Society:** *Dianthus carthusianorum*. **Garden World Images:** Martin Hughes-Jones: *Crassula sarcocaulis*. **Dorling Kindersley:** Mark Winwood/*RHS Wisley: Dianthus carthusianorum*. **340 The Garden Collection:** Andrew Lawson: *Origanum laevigatum*. **342 Alamy:** Martin Hughes-Jones: *Phyteuma scheuchzeri*. **Alpine Garden Society:** *Lithodora oleifolia*. **Garden World Images:** *Convolvulus sabatius*. **343 Eric Crichton Photos:** *Hypericum olympicum* f. *uniflorum* 'Citrinum', *Lithodora diffusa* 'Heavenly Blue'. **345 Alamy:** National Geographic Image Collection: *Ononis natrix*. **Eric Crichton Photos:** *Helianthemum* 'Ben More'. **346 Alamy:** Steffen Hauser/botanikfoto: *Ceratostigma plumbaginoides*. **Garden World Images:** *Gaultheria cuneata, Ranunculus calandrinioides*. **347 Alpine Garden Society:** *Androsace vandellii*. **349 Garden World Images:** Gilles Delacroix: *Leptinella atrata* subsp. *luteola*. **351 Garden World Images:** *Daphne arbuscula, Epigaea gaultherioides*. **352 Garden World Images:** *Silene acaulis;* Dave Bevan: *Arabis alpina* subsp. *caucasica* 'Douler Angevine'. **354 Garden World Images:** Lee Thomas: *Aubrieta* 'Greencourt Purple'. **Dorling Kindersley:** Mark Winwood/RHS Malvern Flower Show 2014: *Aubrieta* 'Doctor Mules Variegata'. **Photos Horticultural:** *Soldanella villosa*. **355 Alpine Garden Society:** *Jancaea heldreichii*. **Spectrum Photofile:** *Aubrieta* 'Purple Charm'. **356 Alamy:** blickwinkel: *Mertensia maritima*. **Garden World Images:** Martin Hughes-Jones: *Viola cornuta* 'Minor'. **357 GAP Photos:** Juliette Wade: *Ranunculus ficaria* Flore Pleno Group. **Garden World Images:** *Draba longisiliqua, Draba rigida, Saxifraga* x *elizabethae*. **358 Garden World Images:** *Erysimum helveticum*. **360 Alpine Garden Society:** *Lewisia rediviva* [white form]. **361 Garden World Images:** *Alstroemeria hookeri*. **362 Alpine Garden Society:** *Convolvulus althaeoides*. **363 Garden World Images:** *Dianthus pavonius*. **364 Dorling Kindersley:** Mark Winwood/RHS Wisley: *Dianthus* 'Pike's Pink', Dianthus alpinus. **Alamy:** Bob Gibbons: *Pterocephalus perennis*. **365 Alpine Garden Society:** *Lewisia rediviva* [pink form]. **368 Alamy:** Brian & Sophia Fuller: *Pinguicula grandiflora*. **Alpine Garden Society:** *Aquilegia jonesii*. **Eric Crichton Photos:** *Edraianthus pumilio*. **369 Eric Crichton Photos:** *Globularia cordifolia*. **GAP Photos:** Neil Holmes: *Polygala calcarea* 'Lillet'. **Garden World Images:** *Cyananthus microphyllus, Townsendia grandiflora*. **370 GAP Photos:** Michael Howes: *Gentiana* 'Inverleith', *G.* 'Shot Silk'. **Garden World Images:** Jenny Lilly: *G.* 'Soutra'; Lee Thomas: *G.* 'Blue Silk'. **The Garden Collection:** Jonathan Buckley: *Gentiana* 'Strathmore'. **Marianne Majerus Garden Images:** Marianne Majerus: *G.* 'Ettrick', *G.* 'Eugen's Allerbester'. **Muriel Hodgeman:** *Eritrichium nanum*. **Photolibrary:** Sunniva Harte: *Parochetus communis*. **373 Eric Crichton Photos:** *Gaultheria procumbens*. **Garden World Images:** *Hippocrepis comosa, Nertera granadensis*. **375 Alamy:** Steffen Hauser/botanikfoto: *Paronychia kapela* subsp.*serpyllifolia;* Organica: *Arabis procurrens* 'Variegata'. **Garden World Images:** *Arctostaphylos uva-ursi* 'Point Reyes'. **376 Alpine Garden Society:** *Arctostaphylos uva-ursi*. **377 Fernwood Nursery:** *Sempervivum* 'Blood Tip', *S.* 'Gallivarda', *S.* 'Gulle Dame', *S.* 'Kappa', *S.* 'Rosie', *S. calcareum* 'Extra'. **Photolibrary:** Frederic Didillon: *S. calcareum*. **378-379 GAP Photos:** Richard Bloom. **379 GAP Photos:** Carole Drake (ftl); Dianna Jazwinski (tl); Clive Nichols (ftr). **380 Corbis:** Clive Nichols (bl). **GAP Photos:** (fcla); FhF Greenmedia (fcl); Virginia Grey (cl); Geoff Kidd (cla). **Getty Images:** Wally Eberhart (bl/tuber). **Marianne Majerus Garden Images:** Marianne Majerus, Goodnestone Park Gardens (br). **382 Alamy:** MBP-Plants: *Fritillaria imperialis* 'Lutea'. **Eric Crichton Photos:** *Fritillaria persica*. **GAP Photos:** Sabina Ruber: *Fritillaria persica* 'Ivory Bells'. **Getty:** Ron Evans: *Allium aflatunense*. **Photolibrary:** Chris Burrows: *Ornithogalum magnum*. **383 Alamy:** Michel Foret: *Fritillaria recurva*. **384 Alamy:** CuboImages srl: *Gladiolus* 'Wine and Roses'. **GAP Photos:** John Glover: *G.* 'White Prosperity'; Martin Hughes-Jones: *G.* 'Impressive'; Visions: *G.* 'Blue Frost', *G.* 'Columbine', *G.* 'Her Majesty', *G.* 'Morning Gold', *G.* 'Nova Lux', *G.* 'Nymph', *G.* 'Oscar', *G.* 'Purple Flora', *G.*'Velvet Eyes'. **Getty:** Gerald Majumdar: *G.* 'Stella'. **Photoshot:** Photos Horticultural: *G.* 'Sancerre'. **385 Alamy:** The National Trust Photolibrary: *Cardiocrinum giganteum*. **Garden World Images:** *Watsonia meriana;* John Martin: *Allium* 'Mount Everest'. **Marianne Majerus Garden Images:** Marianne Majerus, Rita Streitz: *Polianthes tuberosa*. **386 Garden World Images:** *Notholirion campanulatum, Watsonia borbonica*. **387 Alamy:** Holmes Garden Photos: *Alstroemeria* 'Blushing Bride'. **GAP Photos:** Howard Rice: *Alstroemeria* 'Apollo', *A.*'Moulin Rouge'; Visions: *A.*INCA ICE ('Koice'), *A.*INCA TROPIC ('Kotrop'), *A.*'Tara'. **Garden World Images:** G Harper: *A.*'Friendship'; MAP/A Descat: *A. aurea* 'Orange King'; L Thomas: *A.* PRINCESS JULIETA ('Zaprijul'), *A.* PRINCESS ARIANE ('Zapriari'). **Science Photo Library (SPL)**: Neil Joy: *A.*'Red Beauty'. **Viv Marsh:** *A.* 'Elvira'. **388 Alamy:** Gig Binder: *Lilium* 'White Heaven'. **Andrew Lawson Photography:** *Lilium* 'Arena', *L.*'Sterling Star'. **Garden World Images:** *L.*'Altari', *L.*'Black Magic'; G Delacroix: *L.*'Altari'. **Photolibrary:** James Guilliam/GPL: *L.* TRIUMPHATOR ('Zanlophator'). **The Garden Collection:** Derek Harris: *L.* 'Nymph'. **389 Alamy:** Brian Hoffman: *L.*'Elodie'; The Garden Picture Library: *L. cernuum*. **Andrew Lawson Photography:** *L. lankongense*. **GAP Photos:** Paul Debois: *L.* 'Tigerwoods'; Clive Nichols: *L.* 'Miss Lucy'; Visions: *L.* 'Starfighter', *L.* 'Sweet Lord'. **Garden World Images:** G. Delacroix: *L.* 'Tom Pouce'; N Johnson: *L.* 'Netty's Pride'. **Dorling Kindersley:** Mark Winwood: *L.* 'Sumatra'. **Jerry Harpur:** Cherry Williams: *L.* 'Rosita'. **Photolibrary:** Sarah Cuttle/GPL: *L.* 'Black Out'. **390 Andrew Lawson Photography:** *L. regale* 'Royal Gold', *L. rosthornii*. **Garden Library:** *L.* 'Roma'. **Garden World Images:** *L.* 'Bright Star', G Delacroix: *L.* 'Conca d'Or'; Floramedia: *L.* 'Boogie Woogie'; John Swithinbank: *L. leichtlinii*. **Photolibrary:** Richard Bloom/GPL: *L.* Citronella Group. **391 Alamy:** Martin Hughes-Jones: *L.* 'African Queen'. **Andrew Lawson Photography:** *L.* 'Crimson Pixie', *L.* 'Karen North', *L. pomponium*. **GAP Photos:** Graham Strong: *L.* 'Orange Electric'. **Garden Library:** *L.* 'Gran Paradiso', *L.* 'Red Carpet'. **Picturesmiths Ltd:** *L.* 'Grand Cru'. **392 GAP Photos:** Clive Nichols: *Allium atropurpureum;* Clive Nichols, Design: Angel Collins: *Allium* 'Gladiator'. **Photolibrary:** Suzie Gibbons: *Allium* 'Globemaster'. **393 Garden World Images:** *Lilium* Golden Splendor Group. **394 GAP Photos:** Sarah Cuttle: *Canna* 'Richard Wallace'; Neil Holmes: *C.* 'Picasso'. **Garden World Images:** Anthony Baggett: *C.* 'Louis Cottin', *C.*x *ehemanii;* Eric Crichton: *C.* 'Striata'. **Marianne Majerus Garden Images:** Marianne Majerus: *C.* 'Stuttgart'. **Photolibrary:** David Cavagnaro: *C.* 'Konigin Charlotte', *C.* 'Königin Charlotte'. **Reedy Meadow Nursery:** *C.*'Wyoming'. **395 Photolibrary:** Mark Bolton/GPL: *Canna* 'Phasion'. **Garden World Images:** *Gladiolus papilio, Zantedeschia* 'Cameo'; Liz Cole: *Zantedeschia* 'Cameo.' **396 GAP Photos:** Lucy Griffiths: *Dahlia* 'Eveline'. **Alamy:** Holmes Garden Photos: *D.* 'White Moonlight'. **Dorling Kindersley:** Mark Winwood/RHS Chelsea Flower Show 2014: *D.*'Café au Lait'. **Aylett Nurseries:** *D.*'White Ballet'. **397 GAP Photos:** Jonathan Buckley: *Dahlia* 'Bishop of Auckland'; J S Sira: *D.* 'Gerrie Hoek'; Visions: *D.*'Natal', *D.*'Geerlings Sorbet'; Visions/Elburg Botanic Media: *D.* 'New Dimension'. **GardenPhotos.com:** Graham Rice: *D.*'Gallery Art Nouveau'. **Photolibrary:** Ron Evans: *D.*'Franz Kafka'; Michael Howes: *D.*'Cornel'; Ellen Rooney: *D.*'Ruskin Charlotte'. **Dorling Kindersley**: Peter Anderson/National Dahlia Collection: *D.*'Carolina Moon'; Mark Winwood/RHS Chelsea Flower Show 2014: *D.*'Kilburn Rose', *D.*'Otto's Thrill', *D.* 'Hootenanny'. **398 Alamy:** RDE Flora: *D.*'Ellen Huston'. **Eric Crichton Photos:** *D.*'Comet'. **GAP Photos:** Graham Rice: *D.* HAPPY SINGLE FIRST LOVE ('HS First love'). **Garden World Images:** T Jennings: *D.*'Bishop of York'. **P-Pod:** *D.*'Moonglow'. **Photolibrary:** Richard Surman: *D.*'Alva's Supreme'. **399 Garden World Images:** *Pamianthe peruviana*. **Getty:** Clive Nichols: *Ornithogalum nutans*. **Trecanna Nursery:** *Bellevalia romana*. **400 Alamy:** John Glover: *Tulipa* 'Shirley'. **Eric Crichton Photos:** *Tulipa* 'Purissima'. **GAP Photos:** Visions: *Tulipa* 'Esperanto'. **Garden World Images:** Nathalie Pasquel: *Tulipa* 'Albert Heijn'. **401 Dorling Kindersley:** Mark Winwood/RHS Wisley: 'Abu Hassan'. **GAP Photos:** Visions: *Tulipa* 'Negrita', *Tulipa* 'Black Hero'. **Alamy:** West Country Images: *Tulipa* 'Ballerina'. **403 Alamy:** Organica: *Ixiolirion tataricum*. **GAP Photos:** Clive Nichols: *Anemone coronaria* De Caen Group 'Mister Fokker'. **404 GAP Photos:** Richard Bloom: *Narcissus* 'Fragrant Breeze'. **Photoshot:** Photos Horticultural: *N.* 'Mount Hood'. **405 Dorling Kindersley:** Mark Winwood/RHS Wisley: *N.* 'Sir Winston Churchill', *N.* 'Jenny'. **406 Dorling Kindersley:** Mark Winwood/RHS Malvern Flower Show 2014: *Fritillaria pontica*. **407 Alamy: GAP Photos:** J S Sira: *Triteleia ixioides* 'Starlight'. **Dorling Kindersley:** Mark Winwood /RHS Wisley: *Ferraria crispa, Stenomesson miniatum, Tulipa orphanidea* Whittallii Group. **408 Alamy:** Hideo Kurihara: *Habenaria radiata*. **Eric Crichton Photos:** *Ornithogalum thyrsoides*. **409 Garden World Images:** *Ornithogalum arabicum*. **Alamy:** Christopher Burrows: *Calochortus superbus;* The Garden Picture Library: *Tritonia disticha* subsp. *rubrolucens*. **GAP Photos:** Jonathan Buckley: *Allium schubertii*. **The Garden Collection**: Jonathan Buckley: *Allium neapolitanum* Cowanii Group. **410 GAP Photos:** Martin Hughes-Jones: *Crocosmia* 'Severn Sunrise'; Visions Premium: *C.*x *crocosmiiflora* 'Honey Angels'. **Marianne Majerus Garden Images:** Andrew Lawson: *C.*x *crocosmiiflora* 'Star of the East'; Marianne Majerus: *C.*x *crocosmiiflora* 'George Davison'. **Photolibrary:** Mark Bolton: *C.*x *crocosmiiflora* 'Solfatare'. **411 GAP Photos:** Richard Bloom: *Camassia quamash;* J S Sira: *Roscoea auriculata, Triteleia laxa* 'Koningin Fabiola'. **412 Dorling Kindersley:** RHS Tatton Park: *Eucomis bicolor*. **GAP Photos:** J S Sira: *Ismene* x *spofforthiae* 'Sulphur Queen'. **Garden World Images:** *Arisaema griffithii*. **413 Photos Horticultural:** *Nerine* 'Orion.' **414 Garden World Images:** *Ornithogalum balansae*. **415 Alamy:** Jacquie Green: *Hyacinthus orientalis* 'White Pearl'. **International Flower Bulb Centre:** *Iris* 'Natascha'. **416 Alamy:** Elizabeth Whiting & Associates: *Allium acuminatum;* WoodyStock: *Ornithogalum umbellatum*. **Dorling Kindersley:** Mark Winwood/RHS Wisley: *Scilla siberica* 'Alba'. **Garden World Images:** *Anemone tschaernjaewii*. **417 Dorling Kindersley:** Mark Winwood /RHS Wisley: *Crocus goulimyi, 'Cream Beauty'*. **Alamy:** idp crocus collection: *C.*'Zwanenberg Bronze'. **Garden World Images:** *C.*'Blue Bird',*C.*'Eyecatcher', *C.speciosus* 'Conqueror'. **Pat Brindley:** *C. vernus* 'Remembrance'. **Photolibrary:** Francesca York: *C.vernus* 'Queen of the Blues'. **418 Alamy:** Bob Gibbons: *Babiana rubrocyanea;* J Marshall - Tribaleye Images: *Sparaxis tricolor*. **GAP Photos:** Visions: *Iris* 'Pixie'. **420 Garden World Images:** *Tecophilaea cyanocrocusii*. **421 Dorling Kindersley:** Mark Winwood /RHS Wisley: *Ledebouria socialis*. **Garden World Images:** *Crocus* 'Blue Pearl', *Hyacinthella leucophaea*. **422 Garden World Images:** *Dipcadi serotinum. 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